Thu, 27 February 2025
Weekly Newsletter

DVN Interior

NEWSLETTER #250

Editorial

Italdesign's Intriguing Innovations

ITALDESIGN IMAGE

Newsletter № 250 is an important milestone in the continuing development of DVN Interior. For this occasion, we wanted to present an exceptional interview—and that's what we've got for you this week. DVN Interior's Olimpia Migliore went to Italdesign Engineering, headed by the CTO Davide Casini, to explore their services, lesser known but no less impressive, than Italdesign's long-famous styling work. This interview, and the new brand image of Italdesign summarized by the brandmark coinage 'Ideneers' (a portmanteau of 'idea' and 'engineers') concentrate the image and reputation Italdesign has built worldwide over the last half-century.

Italdesign will be presenting and exhibiting at the next DVN Interior Workshop, which is yet another reason you won't want to miss it. **Register online** to join us as well!

DVN Interior members can sign up for the Ford Köln EV Center visit on Tuesday, April 8, at 9 AM.
Registration is limited to one person per company, with a maximum of 45 participants, on a first-come, first-served basis.
To register, you will need to reply to a specific email that you will receive soon.

Sincerely yours,

Philippe Aumont
DVN-Interior General Editor

In Depth Interior Technology

DVN Interview: Italdesign's 'Ideneers'

Have you driven a car designed, developed, or engineered by Italdesign? Probably so! Since creating the iconic Alfa Romeo Alfasud in 1971, Italdesign has created models for the world's automakers—over 60 million Italdesigned cars on the road worldwide. Vertically integrated from design to engineering, testing, and validation, Italdesign remains a trailblazer in the automotive world.

Founder Giorgetto Giugiaro, together with Aldo Mantovani, are giants in the Italian design industry. They and their associates and successors have propelled Italian car styling to grand heights. We talked and listened with Italdesign's CTO Davide Casini; Concept Development & Virtual Validation Team Leader Matilde Piccione, and Gian Marco Tassi, an Italdesign Passive Safety Development specialist:

GIUGIARO AND THE MK1 VW GOLF HE DESIGNED

BMW (L) AND ALFA-ROMEO (R) CARS DESIGNED BY ITALDESIGN

DVN Interior – Olimpia Migliore: Tell me about Italdesign's capabilities.

Davide Casini (CTO): Italdesign can provide vehicle development services from styling, therefore design in the strict sense of the term, to engineering, pre-production, or production of small series.

Design starts from the initial conceptual sketches, continues with the analysis of the user experience, the creation of all the internal and external surfaces, and all the style convergence activities done in cooperation with the engineers. The design that is developed, in addition to responding to customer needs, also responds to legislative and manufacturability needs, so it is never just styling, but design ready to be engineered and manufactured.

In the engineering field, our company is able to start from the concept and get to the production start. The services cover the development of the body, of the components and systems, including the virtual and physical validation.

We are also able to coordinate and steer the tier-1s, and also after supplier nomination we can take care of the completion of the project and production.

DVN: How do you handle electronics?

D.C.: in the electric-electronics field we essentially deal with the application of available systems of ADAS, HMI, connectivity platforms and e-traction, with part of the software development done internally, such as high-level HMI graphic interface softwares.

The lower-level ADAS or connectivity software normally comes from the OEM as a ready-to-use platform, while we provide the application and adaptation to the product we are developing.

DVN: How about prototyping and validation?

D.C.: In the pre-industrialization and industrialization phase we can produce all the necessary prototypes internally, but those are increasingly less requested for reasons of time and costs and because virtual development tools are very reliable today.

As an engineering team we are also able to do the entire validation phase of pre-series already built in the production plants or we can produce small series, from one to a hundred cars per year.

DVN Interior: Where do you build these prototypes and cars?

D.C.: Moncalieri, Vadò, and Nichelino, therefore within a radius of 10 km around the headquarters.

DVN Interior: Can you walk us through an example?

D.C.: The Nissan GTR 50, whose design comes from the OEM, while Italdesign has taken care of the entire engineering, validation and construction part (about 20 cars). In fact, we can define ourselves as a one-stop shop, from style, to setup, benchmarking, engineering, up to production startup. Except for process engineering of big volumes, of course, since this is strictly linked to the manufacturer's plants and existing machinery. while in case of limited internal productions, such as the GTR 50, we were also takin care of with the process engineering, which obviously follows the logic of limited productions and not large series.

NISSAN GTR 50

DVN: Are the skills for all these activities exclusively internal?

D.C.: Almost. We also rely on external partners and suppliers, but only to expand our skills and knowledge. For example, if we receive instructions for the installation of a component from our customer, we first try to understand how it works and how it can be best integrated and, if necessary, we also indicate to the supplier the changes necessary to adapt it to the vehicle we are developing. In essence, we always look at the project as a whole, not at the individual component or perimeter. When the client submits a project to us, before accepting it we formulate a whole series of questions, which at first may seem excessive or redundant for the client, but whose value in the end is recognized as a proof of our competence and efficiency, because they anticipate problems that are perhaps not very evident at the beginning.

DVN: Would it be fair to say this part of your competence has developed in the last 20 years?

D.C.: this is a perception that is not completely correct, because the heart of the company has always been design together with engineering, which, talking about the founders, was represented by Giorgetto Giugiaro and Aldo Mantovani. Giugiaro was a character, a name, he knew how to generate emotions. Design is emotional and therefore remains longer in people's memory. Engineering is much more difficult to describe and make attractive to the general public.

DVN: What percentage of your turnover does it represent?

D.C.: Even if we are known as a company that creates style, engineering is in fact the heart of Italdesign from the beginning, it is the main business of the company and represents 80 per cent of the turnover. Today the engineering team has 800 people globally. 700 of whom are in Moncalieri. In fact we are a small OEM, being a branch of Audi and their technical direction and working 60 per cent of the time for them.

ITALDESIGN ENGINEERING

DVN: Your Concept Lab exemplifies Italdesign expertise and ingenuity, which is also particularly interesting for our readers because it is a tool for the development and optimization of car interiors. What can you tell us about it?

ITALDESIGN CONCEPT LAB

Italdesign, Matilde Piccioni (Concept Development & Virtual Validation Team Leader)**:** The concept lab was born about eight years ago from an idea of digitalization of processes in the automotive development field and more generally in the transport sector. The goal was to digitize and optimize the product development process to overcome the constraints related to the creation of physical models for ergonomic validation and issues related to development times and costs.

We start from the very early stages of the project, with raw data, stages in which there are not even the mathematics or data to create a physical model.
With a tool such the Concept Lab it is possible, both from the point of view of the physical and virtual model, to set up a very first layout of the car and proceed in defining what is the macro setting and the hard points of the vehicle.

After that, throughout the development of the project, as the project phases progress and mature, it is possible to create more detailed sessions and therefore represent even more realistic and more substantial layouts in terms of details, both from the point of view of the physical and virtual structure.

DVN: How are the physical systems made?

M.P.: The tool consists of a physical mockup and is composed of a load-bearing structure that replicates the floor of the vehicle, with the seats, doors, pedalboard and steering wheel. All the elements are adjustable in various directions, so everything can be positioned to represent different layouts of the car, from sports cars to commercial vehicles. Everything else is then integrated with virtual reality technologies.

One of the main advantages compared to physical models is the optimization in terms of physical parts, therefore of material, not only linked to the development time, but also a saving in terms of materials, therefore energy efficiency and raw material.

DVN: Do you have a database that can be integrated in the virtual reality software to reproduce the textures or the type of material?

M.P.: With the support of virtual technologies the materials are rendered, therefore the various materials are visually represented, but the possibility of having tactile feedback of the materials is not yet implemented. But the technology development is supporting us more and more in that direction.

The trend is to increasingly minimize physical elements and realize only part of them, possibly with more sustainable technologies than in the past. So, if in the past the direction was to mill elements of a certain size inside the hardware, today there is a greater tendency to work with small partials made in 3D printing and with more sustainable materials if needed.

DVN: What was the Concept Lab originally meant for?

M.P.: The Concept Lab was born mainly for ergonomic validation activities, therefore everything that is the performance of reachability, visibility, reflections, habitability, a mixed approach between physical and virtual reality.

In the field of software development, we have managed to integrate, within the same setup, activities more related to the style and benchmark of competitor vehicles, therefore the comparison between different models, different style layouts or more technical layouts. All this with a simple switch, always sitting in the same car configuration or changing the layout, all in real time.

DVN: So everything, the hardware and software, is in-house by Italdesign?

M.P.: Yes, the software was developed and patented by Italdesign and the methodology and the application behind this combination of hardware and software parts are patented. The user experience that we can recreate with this setup is also proprietary to Italdesign.

One of the technologies that we use in the virtual world is a tracking system, on the shelf, that we have integrated with the rest of the equipment and customized for our specific use cases.

This allows us to track the elements of the physical world, whether they are elements specific to the car such as the seat and steering wheel, or the body parts, so the hands or the entire body of the user. With a perfect alignment between the physical and virtual worlds.

CONCEPT LAB, VIRTUAL REALITY TOOLS

DVN: Taking seat development, for instance, historically seats have been developed only for the standard percentile, and not the 5th and the 95th. With this tool you can design for everyone?

M.P.: Yes, for example, in the case of seats, it is possible to simulate from the fifth percentile up to the 95th, allowing to collect a series of subjective data and objectify them in addition to the predictions that are made in the design phase with conventional CAD tools for standard percentiles.

The data is then validated with clinical tests, with adequately selected population samples that are involved and then interviewed to collect subjective feedback, not exclusively linked to body size and therefore to the percentile, but also to comfort and ergonomics.

DVN: Do you benchmark competing models?

M.P.: Yes, the possible combinations are infinite, in the sense that by combining and minimizing the hardware parts and customizing them, working on the virtual environment, it is possible to recreate different setups, different scenarios and different sessions depending on the project phase and the purpose of the session.

The tool is also made for that, so to define the hard points of the car in the preliminary phases of the project, define the seating setup, so the position of the seat and steering wheel, and also support us in those activities of convergence with the style, that is to say everything that is the meeting point between the styling creativity and the translation into engineering technique.

DVN: In the early stages of a project, is your interaction mainly with the OEM style centre?

M.P.: In reality, car development has changed a lot in recent years. The user is always at the center of development so whoever designs the car interior is strongly guided by consumer research and design studio. But the interaction with engineering is very strong right from the start because the technological contents are increasingly higher.

The Concept Lab is very useful for the development of the HMI of a touch screen, for which the evaluation of ergonomics and user friendliness is done in a completely virtual environment, with development times and costs that are dramatically reduced.

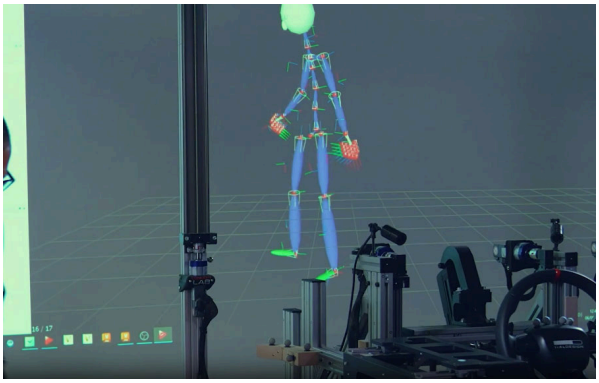
The situation in which the simulation environment is made dynamic, finally allows to simulate infinite combinations, by adding a driving experience on the road, with factors such as digital distraction which can be evaluated. The dynamic context is certainly more faithful to a real experience.

DVN: What other car interior situations can be simulated?

M.P.: Lightingcan also be simulated, and there are also tools to check the reflection of the screens in various light conditions, or how the screens are reflected on the external mirror.

Or you can use the Collision Tool, a tool that allows us to perceive a response, a feedback in terms of vibration, sound and color when you intercept the virtual surface.

In this case, gloves are worn, part of the tracking system. For these gloves, a software has been developed that allows us to perceive something upon contact with a virtual object. For example, for a display installed in the centre of the car, I can evaluate when I can actually reach the display or, if the display is too far away, evaluate what is the distance between my reachability area and the virtual component.



DVN: And you can also connect this to the seat position.

M.P.: Yes, absolutely, when users gets on board they can adjust the seat and the steering wheel position exactly like in a car. At that point it is also possible to do reverse engineering, so freeze the positions chosen by each individual user and go map each user during the clinic test. Later, after the clinic, it is possible to redraw some points to see the various selected percentiles and see how they are placed within the preliminary layout that we are studying.

DVN: What about with autonomous driving, when the seats might be in unusual positions?

M.P.: You can adapt the position, by turning the seats or changing the seats, from those of super sports cars to trucks. For trucks for example, a possible analysis is the one of the blind spots, that is, if I can see the pedestrians around me. We were able to compare different models simulating the passage of pedestrians in different positions and the user was able to actually see, with the different style and engineering solutions, what was the driver perception, and the vision around the vehicle.

DVN: So you can simulate the interiors of VTOLs or the future mobility before it is even built?

M.P.: Absolutely, yes!

FUTURE INTERIOR PROJECTS BY ITALDESIGN

DVN: What are the development times like?

M.P.: a complete exterior-interior physical model requires a development of about eight weeks, so two months, between the design phase and the mathematics and the assembly and realization of the physical object. A session in Concept Lab can last from a few days to 3-4 days to a couple of weeks.

For the setup of a complete experience, with clinic tests and final presentation, development times are reduced by over 50 per cent, and consequently also the costs related to the creation of the different scenarios.

So less time, but lots of content.

DVN:Let's talk about innovation. What process do you follow for innovation? What are your sources of inspiration?

ITALDESIGN'S DAVIDE CASINI

D.C.: Innovation at Italdesign can arise from requests from customers who come to us with a certain type of problem and ask us how to solve it in a different way than how it is normally faced.

Or—and this is a large part of the innovation we do—it is born within our company. Since we ourselves are users of our product, we analyze the problems and our desires, things we would like to be different in our car. All Italdesign employees are free to propose ideas.

DVN: How does that work?

D.C.: Typically, colleagues propose the idea to their area manager as a first step and then the ideas are examined by the two innovation project managers, Elena Negro and Nikolas Vinci. They collect the ideas and begin a process of evaluation and validation of these ideas, evaluation and validation.

We go and do market analyses, and if necessary internal or external surveys, to understand if we are going to hit a problem that actually needs a resolution.

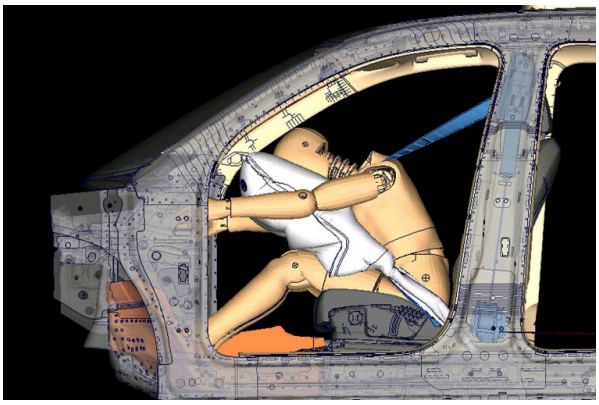
We then typically develop a proof of concept and a business case analysis.

DVN: What type of data do you use to validate the idea?

D.C.: We have data on the costs of hardware and software in the automotive industry, so we are going to estimate the cost of our object compared to those that are standard content.

In the example of an innovation that we recently developed, a new type of airbag, we know the development costs of an airbag well but also the construction costs. In that case we combined the cost of the belt and the airbag bag to the best of our knowledge to estimate what the cost of the final product would have been.

DVN: So, innovative products and processes. Do you have some favorite examples?



ITALDESIGN'S INNOVATIVE AIRBAG-INTEGRATED SEAT BELT CONCEPT

Italdesign, Gian Marco Tassi – Passive Safety Development:We developed a new type of airbag integrated into the seat belt. We started from the following problem: let's imagine in a self-driving car that we no longer have a traditional dashboard: if I don't have a place to install an airbag anymore, where am I going to place it?

Among the various alternatives, we said, why don't we go and put it on the abdominal branch of the belt? So we built a dummy, which was mounted on a super sports car and an SUV.

We did static and dynamic clinic tests. Potential customers first put the belt on statically, to get the feeling of what it would be like in the car. Then we gave a test matrix to the user by telling them to put it on, take the belt off, then put it back on, then start doing some types of movements and describe the feeling you have. We did the test with and without, to compare on two very different types of cars.

DVN: Were there dynamic tests, with cars on the road?

G.M.T.: We also went on the road, to see what the customer felt like. We then went to do the validation in the event of a crash, so we could be sure that the performance that is given is similar to that of the traditional belt plus airbag system.

We also took pressure measurements on the abdomen, to be sure that we were not going to generate damage to the abdomen during airbag deployment, and simulated misuse tests and extreme cases, so 5^{th} - 95^{th} percentiles, or conditions in which I cover the bag with my jacket, conditions in which I stand crosswise, conditions in which instead of protecting the user there is the risk of causing harm, or if I travel with a tablet.

We then did a full cost analysis, that is, how much is the development cost of the bag and belt system and the bag on belt system, how much is the cost of the variable, how much is the cost of validating the system and in fact we came to the conclusion that a system like this gives economic benefit both in terms of development costs and in terms of the variable.

So, going back to the development process, it is a well-rounded process, that is, we analyze how the user would perceive innovation, what cost the innovation has for the OEM and for the user himself and the technical feasibility.

Furthermore, if before a car lifetime was 7-8 years, now it is only 3 or 4 and the next version must already have much more content, so we also need to anticipate times, offering innovative content to our customers, helping them keep up with technology development.

DVN: Fascinating! We could talk about your innovation for a long time but we will leave some surprises for our next Interiors conference in Cologne. Thank you very much to the whole engineering team, and we hope to see many of you in April in Cologne to illustrate your engineering services and new innovation concepts.

Interior News

Zeekr Mix is Mobile Capsule for A.D. Age

INTERIOR NEWS

ZEEKR IMAGES

With a wide range of sensors, powerful Nvidia chip technology and futuristic interior variability, the Mix aims to set new interior standards. Stefan Sielaff is responsible for the Zeekr Mix design. He calls the car "an experiment, a mobile capsule on four wheels that takes its passengers into the age of autonomous driving". Find more information on the Mix in previous **DVN-Interior coverage**.

Compared to the competition, the Mix masters more than 1,000 new traffic scenarios for autonomous driving, according to Zeekr. For example, elegant overtaking maneuvers on the highway, complex city intersections, and safely merging into stop-and-go turning traffic without manual intervention. The van can also park alongside and perpendicular to the road under remote control.

This is made possible by the Haohan 2.0 control system in the depths of the electronic architecture. In the next stage of development, it even manages without precision cards, Zeekr claims—based solely on scenarios processed onboard. Situational conditions are recorded by a lidar, five mm-wave radars, 12 ultrasonic sensors, and 13 cameras. The data from this raftload of sensors is processed by two Nvidia Orion X chips with extremely fast computing power.

The entire multi-lane environment is shown on the central tablet and AR HUD. A narrow display above the steering column provides information on range, consumption, and driving speed. Radar and cameras monitor the entire 360-degree environment of the vehicle.

You enter the Mix through the huge 148W × 133H cm side door; there are no B-pillars. Legroom is above standards. The driver and front passenger seats swivel 270°, and the rear seats can be turned into a double bed. Nine programmed living area configurations are stored in the central display and can be controlled via voice commands from any seat. There are numerous USB ports and house-current sockets for powering a music amplifier, rice stove, espresso machine or hotplate for the Chinese national dish hotpot—the variety in the interior should delight customers.

Wind and rolling noises are inaudible up to 120 km/h. The Mix leisure capsule is built on Geely's modernized 800 V architecture, in the current basic version with a 310 kW (421 hp) electric motor on the rear axle. 0 to 100 km/h takes 6.8 seconds. The power is provided by a 76 kWh LFP battery developed by Geely, which is designed to recharge ultra-fast with up to 418 kW (charging rate 5.5 C). Reportedly, it only takes 10.5 minutes to recharge from 10 to 80 percent.

ZF's Lifetec Active Heel Airbag

INTERIOR NEWS

ZF LIFETEC IMAGE

With the new Active Heel Airbag, ZF Lifetec aims to reduce the risk of injury to the lower extremities of a vehicle's front-seat occupants. It supplements the knee airbag and enables a stable heel impact point even in comfortable seating positions.

In conventional seating positions, the vehicle floor provides sufficient support for the feet of front seat occupants, thus ensuring a stable heel strike point, explains the supplier. The secure support of the heel in the footwell allows the knee joint to enter the knee airbag at the most favorable angle when it is installed. This allows large parts of the crash energy to be transferred through the thigh into the vehicle structure.

However, crash tests have shown this is no longer the case as soon as the occupant moves their seat rearward and adopts a more comfortable sitting position. The knee joints can then no longer support themselves in the intended position, which leads to uncontrolled movement of the legs. This could result in serious leg and foot injuries. "The Active Heel Airbag helps to ensure an adequate heel contact point even in more comfortable seating positions," says Harald Lutz, Head of Development at ZF Lifetec.

According to the press release, the Active Heel airbag can be used for comfort positions on the driver's side. This makes it possible, for example, to activate the airbag during assisted driving using a comfort position button or by means of camera-based interior monitoring on the driver's side. By embedding the pedals, the Active Heel Airbag creates a homogeneous contact surface for the heel during an accident. The risk of injuries caused by twisting the feet when hitting edges, such as the brake pedal, is also reduced.

According to ZF Lifetec, the Active Heel airbag can be integrated directly into the footwell without requiring additional installation space. In a crash, the airbag inflates under the carpet of the vehicle. According to the company, integration is possible in almost any vehicle model. For manufacturers who want to offer their occupants seat settings with extended comfort positions, the use of the Active Heel airbag will be possible from 2028.

The De Luxe BMW I7 Interior

INTERIOR NEWS

BMW IMAGES

The BMW i7 interior glitters with crystals. The gear selector, controller, stop/start button, volume control, seat adjustment controls, and illuminated function bar can all be fitted with crystal glass. The focus is on luxury. Seat ventilation and massage functions become a matter of course. The fact that these are also available for the rear seats is just one indication of the extent to which BMW is focusing on customers with chauffeurs.

The 12.3" display behind the steering wheel provides a double view in the direction of travel: the Augmented View function is one of the options for the middle display segment in this 7 Series. It provides a live video stream from the front camera with context-relevant additional information on navigation or driver assistance. With the combination of augmented reality and the map view of HUD, BMW has created a practical addition within the visual axis that helps to overcome the navigation overview.

When stationary or during Level 3 driving, there is time to explore the infotainment offering in the i7. All infotainment operating systems are basically in-house developments. However, individual components were of course developed in cooperation. The first impression of the 14.9-inch curved display is somewhat overwhelming.

The number of control units has already been more than halved. In the current model generation, complex software functions are processed in a handful of high-performance computers. The technology package of the current model generation launched in 2021 in the iX paved the way for new, highly complex vehicle functions and has set new standards for powerful sensors, connectivity (5G), data processing (gigabit Ethernet) and vehicle and networked intelligence (BMW Cloud).

With the further increase in digital functionality and the associated complexity as well as significantly higher data throughput of future vehicle functions, BMW is fundamentally rebuilding the E/E architecture for the Neue Klasse vehicles. The focus here is on further high integration of the control units in high-performance computers (four of them), zonalization of the wiring harness, and more standardization of the software platforms across all vehicle models.

BMW IMAGES

The theater screen in the rear…lighting effects in the panoramic glass roof…the Interaction Bar which combines classic functions and innovative light signals in a matching design. BMW has achieved a grand combination of luxury and sportiness in the interior.

Pure luxury reigns in the back seat. In contrast to previous 7 Series models, the latest generation is only available with a long wheelbase. This provides additional space in the rear. The front passenger seat can be folded forward and a support for the heels can be extended. In combination with the calf rest and the heated armrest (which has a smartphone tray for inductive charging) this facilitates a pleasantly reclined position.

The 31.3" display in 32:9 format can be extended from the headliner and, with 8K resolution and Amazon Fire TV, creates a cinematic atmosphere in the rear. The side and rear windows are automatically darkened by a roller blind, and logging into your personal account opens up all kinds of possibilities: YouTube, Netflix, Disney Plus, Prime, TV media library—anyone sitting in the back has a free choice. Billing is based on the mobile provider's data tariff, using an eSIM.

There are smartphone-like touch displays in the doors, which can be used to control the screen, as well as the massage functions, reclining position, light, temperature and sound. For the audio output, either two Bluetooth headphones or the extremely impressive 36 speakers of the Bowers & Wilkins surround sound system can be used. The giant screen can also be operated directly on the screen, greasy fingerprints included. A quick click on the button on the left of the steering wheel and the green control symbol lights up in the cockpit and HUD. A few seconds later, it shows that Assist Plus is ready. From then on, you can take your hands off the steering wheel and the highway assistant takes over.

Forvia Seating: More Integration, Biometric Systems

INTERIOR NEWS

FORVIA IMAGE

Biometric technology provides another layer to safety and infotainment, and is another challenge for car design.

A seat is not just somewhere to sit: it can host advanced technologies and functions. “We are now able to get rid of the frontiers between digital technology products and the traditional instrument panels, doors, seats and so on, to get user interaction happening all over the interface, no matter if it’s a screen, or in a part of a seat,” says Andreas Wlasak, Forvia Faurecia's VP of Industrial Design. “You won’t see the product boundaries anymore.”

Faurecia’s Cockpit of the Future portfolio includes not just integration of controls into seating surfaces (such as into the armrests) but coordination of safety-related sensor technologies. Infrared cameras tracking biometric indicators such as heart rate and face temperature, to detect drowsiness, are linked to actuators in the seat to instigate haptic vibrations to alert the driver. Facial recognition can be used to automatically adjust seating position; and radar sensors can detect body mass to calculate weight and type of occupant – not just to optimize seat belt tension, for example, but to collect and share information with emergency services in the event of an accident, or to raise the alarm if a child (or animal) is left unattended in a too-hot vehicle.

Hands-Off Highway Assist Coming Soon: Rivian

INTERIOR NEWS

RIVIAN IMAGE

Rivian says they plan to launch a hands-off version of their driver assistance system for highway driving in a few weeks, and an eyes-off version in 2026.

The hands-off system will let Rivian compete with Ford's BlueCruise and GM's SuperCruise. Both those systems significantly outperform Tesla's 'Full Self-Driving' Level-2 driver-assist system.

Rivian posted their first positive gross profit in the fourth quarter of 2024, buoyed by companywide cost-cutting efforts last year, and increased software and services revenues.

Rivian's autonomy ambitions were front-and-center when the company came ou;in 2018. At that time, CEO RJ Scaringe was talking of Rivian owners starting a hike and have their vehicles drive autonomously to meet them at the finish. But autonomy took a back seat, at least publicly, as Rivian focused on completing their IPO, and launching and scaling three vehicles.

Rivian has now posted back-to-back years of building and delivering around 50,000 vehicles, and has some breathing room (thanks to a major deal with Volkswagen finalized late last year) to focus on rolling out features like the hands-off system.

Rivian is training their driver assistance platform using what's known as end-to-end training: instead of writing out hard-coded rules, Rivian uses data from the cameras and radar sensors to train the models that power its driver-assistance system.

Much like Ford and GM, Rivian is starting out by allowing the hands-off feature to only be used on highways. Scaringe said Thursday that, once the eyes-off version launches in 2026, Rivian will slowly allow the driver assistance system to expand beyond other types of roads.

To reach that point, Scaringe said Rivian is evaluating a "variety of really creative ways we can access a substantial amount of GPUs without having to deploy the capex ourselves" in order to train its self-driving models — a notable break from how Tesla is spending billions of dollars on GPUs.

The Design Lounge

Ford Expedition: Split Tailgate, Inbuilt Seating and Storage

THE DESIGN LOUNGE

FORD IMAGES

Ford's Expedition features a new split tailgate designed to enhance the tailgating experience. Its design was inspired by observing how people used their SUVs at events. It offers multiple configurations, including a two-tier storage shelf, a table, and a bench with a backrest. It can be turned into a bench seat and reconfigured to become a table with legs.

In the summer of 2021, Ford designer Micah Jones at his son's soccer game observed the way other parents were using the back of their SUVs. Jones set to work on something that was going to make their tailgating experience better.

The games also inspired more ideas for Jones. He watched one couple each week as they would park and put the liftgate up, then sit awkwardly on the floor in the rear of the SUV with their legs dangling off over the bumper.

“They would do that every week, every game. It was nice because you could really glean from their experience," Jones said. "They had their water bottles or their soda next to them, they had some snacks around them. Basically, they used the floor of the vehicle to put things. That really inspired us to use our flat space really wisely."

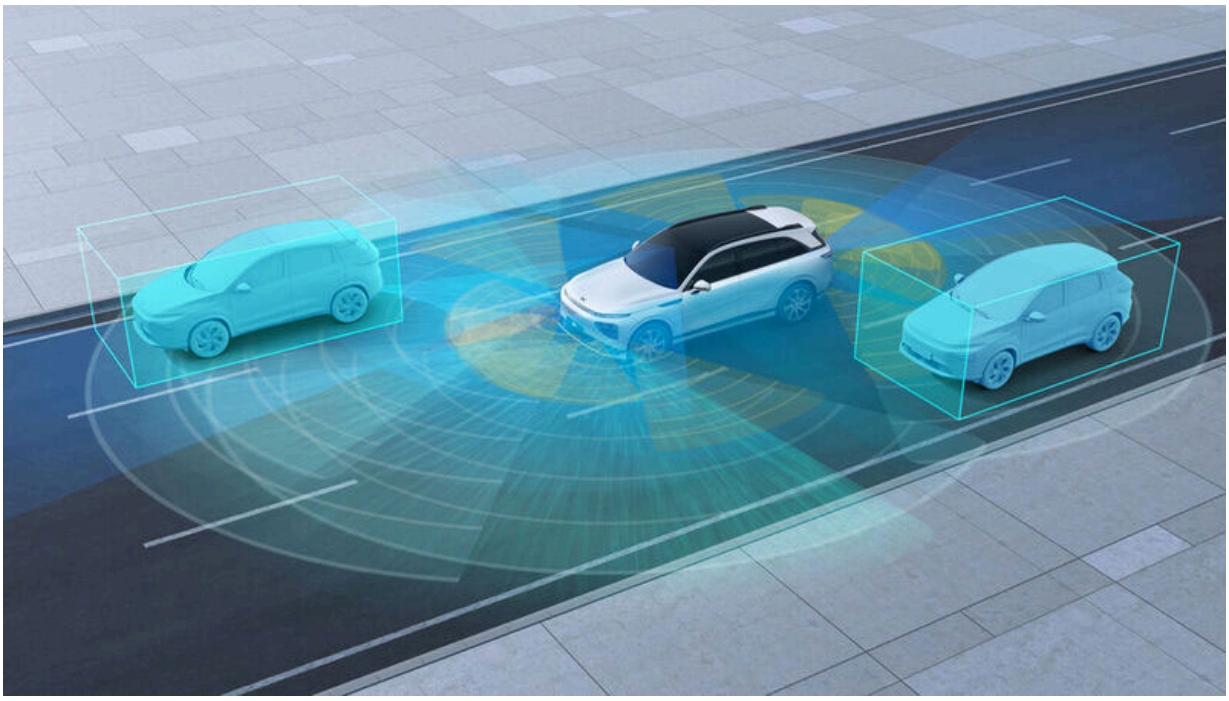
Jones and other designers were set on developing a unique split tailgate for the new 2025 Expedition. The tailgate opens in two parts, a top and bottom half, to allow for better storage and to keep cargo from falling out. The Cargo Tailgate Manager package provides a panel that transforms the area into a two-tier storage shelf, or it becomes a table or a bench with a backrest for comfortable seating. The overhead liftgate offers protection from the sun or rain, and has a privacy curtain that can be attached to the back.

The concept for the split tailgate evolved from simple mock-ups of cardboard, foam spring and wood. "It definitely took a lot of work with the mock models and evaluating it," said Dustin Shedlarski, chief designer of Ford Interiors. "We kept pushing it further and saying, 'What else? What else can we do with it?' Micah and I could go back and forth everyday saying, 'It’s got to do more, it’s got to do more.' "

News Mobility

Study: ADAS and Accidents—Benefits & Drawbacks

NEWS MOBILITY



XPENG IMAGE

Researchers from the Netherlands have compiled global data on the effectiveness of automated driver assistance systems (ADAS) in reducing accidents. The study focused on 28 specific vehicle functions, ranging from simple informational functions such as real-time tire pressure monitoring to camera systems, navigation packages, and mission-critical topics, such as blind spot warnings, lane warning, or emergency braking. The systems were ultimately categorized into four levels of interaction:

- Information systems - low level of control and urgency
- Warning systems - low control and high urgency
- Intervening systems - high control and high urgency
- Comfort-enhancing systems - high control and low urgency

In real-life situations, the study concluded that everything in the first three categories either has no effect or reduces the likelihood of an accident. A tire pressure indicator (information system) makes no difference, but the lane departure warning system showed a 19.1 per cent reduction in accidents. A driver monitoring system reduced the accident rate by 14 per cent. These systems are considered warning and intervention systems and were rated highest in the study.

The only systems that increased the risk of an accident were standard and adaptive cruise control. When considered as comfort-enhancing systems, standard cruise control was associated with a 12 per cent increase, while adaptive cruise control increased the likelihood by 1.8 percent. One particular data point showed an 8-per-cent increase for adaptive cruise control, although other reports showed that it can slightly lower the risk.

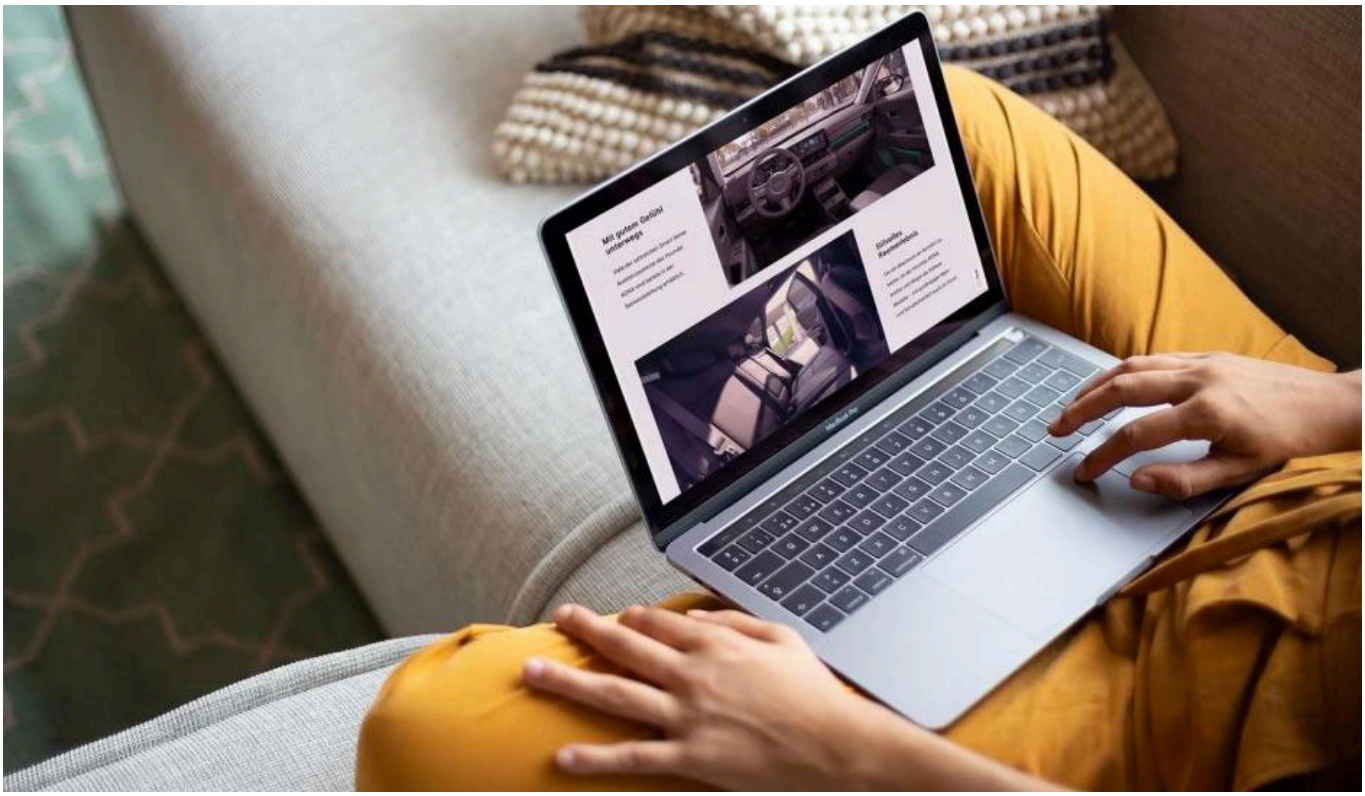
Driver distraction is cited as a reason for both ratings, especially for standard cruise control. By taking away some of the driver's duties at the wheel, cruise control can make them less aware of their surroundings. Adaptive cruise control, wherein the car automatically accelerates and brakes to maintain a safe distance from the vehicle in front, can also lead to mind wandering rather than attentive driving. However, the study points out that not all adaptive cruise control systems are capable of correctly recognizing slow or stationary objects. In theory, automatic emergency braking should intervene in such situations.

But not all vehicles with adaptive cruise control have an emergency braking function. The driver could be lulled into a false sense of security and rely on the system to stop when it is not capable of doing so.

General News

Hyundai's Mocean Car Subscription

GENERAL NEWS



HYUNDAI IMAGE

Hyundai will expand their Mocean car subscription service in Germany, Spain, and UK. Private and business customers can already take out flexible short-term leasing for new cars digitally, with used vehicles to be added to the range this year. Customers can choose from the maker's entire product range, with delivery within one month. The latest solution from Hyundai Connected Mobility aims to get even closer to the customer and make their mobility offers individually and flexibly adaptable to customer needs.

"Mocean Subscription is one of our contributions to the future of mobility," says Marcus Welz, Managing Director of Hyundai Connected Mobility. "We offer a seamless and uncomplicated experience, not only meeting evolving customer expectations, but also paving the way for a dynamic, customer-centric approach." Hyundai is thus following the currently recognizable trend away from owning a car and towards vehicle-as-a-service. "Customers are placing increasing value on convenience and connectivity," Welz continues. He sees the current trend towards car subscriptions as a reflection of the thoughts people are having about their vehicles and transportation needs.

The Hyundai subscription can be managed completely digitally. The subscription fee includes all operating costs including insurance, maintenance, vehicle tax and breakdown assistance. It should also be possible to manage maintenance appointments via the platform. In addition to the subscription fee, the customer only pays the fuel and charging costs. No down payment is due and the vehicle can be changed every six months. This can also be done easily via the platform. Cancellation is possible at any time with one month's notice, but the manufacturer has not yet specified exactly how.