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Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #190

Editorial

Steering Wheel, Safety, Design And HMI

AUDI A5 (AUDI IMAGE)

What makes the difference between a driver and a passenger? ‘Taking the wheel’ means taking control of the entire vehicle, not just the steering.

The steering wheel is the first interior contact and one of the central HMI. You "get behind the wheel" and you keep your vehicle under control with it. The role of this steering wheel is becoming ever more and more important, as it is the first HMI place where the driver is confirming its awakened presence to the machine, by grabbing it.

The steering is part of the safety system, it is an important design element of the interior (including the automaker or marque logo), and it holds many controls, starting with the horn.

That's the focus of this week's in-depth article, including the review of three important steering wheel suppliers: Autoliv, Joyson, and ZF.

Coffee Corner asks whether the steering wheel has a future. What do you think the answer might be?

As the year is nearing its end, it’s coming time to renew your DVN Interior membership. Don't miss a single week!

Sincerely yours,

Philippe Aumont
DVN-Interior General Editor

In Depth Interior Technology

The Steering Wheel: The First Human-Machine Interface

BMW IMAGE

The steering wheel is the earliest Human Machine Interface (HMI), and will surely remain an important part of vehicles in the future. It is not only a central visual element and a key design feature of the vehicle interior, but also fulfils functions relating to safety, functionality, comfort, visuals, and driving enjoyment. That's also where the auto marque logo is placed, as a signature.

To drive a car, you grab the steering wheel, then you sit. While driving, your hands don't touch anything longer than the steering wheel. The steering wheel is the first interior contact and the central user interface. You 'get behind the wheel' and you keep your vehicle under control with it.

Previously, **we have reported** about the loudly and widely unfavorable reaction by drivers, reviewers, and safety experts when Tesla's owner Elon Musk declared round wheels "boring" and started installing a difficult-to-use, hazardous yoke arrangement instead. Numerous other automakers are experimenting in a more measured, thoughtful manner with the shape of the steering wheel, striving to keep the benefits of the round wheel—known and appreciated for over a century—and add benefits of other shapes.

Further developments will enhance analogue and digital interactions for future mobility, particularly as semi-automated driving becomes more prevalent. However, and even if the share of autonomous shuttles and robotaxis increases in the coming decade, L^2 and L^{2+} vehicles will be well represented on the world's roads for quite a long time to come—as will the steering wheel.

MERCEDES S-CLASS 2027 CONCEPT (MERCEDES IMAGE)

However, its form and function are changing. These changes mainly come from the areas of interior design, where new shapes are reflecting more automated driving. It changes with more integration of controls, like **VW putting buttons back** after figuring out that car users hate having to dig through sub-sub-submenus on a screen for every single control and display.

A steering wheel is a vital part of the safety system, it is part of the Design of the Interior, it needs to be functional with many controls; at least the horn—Ford relearned that lesson in the mid-1980s after a few years of sticking drivers with a clumsy, unintuitive requirement to push inward on the turn signal stalk to honk the horn.

Steering Wheel Market and Suppliers

The global steering wheel market is projected to grow from USD $19.3bn in 2021 to $32.9bn in 2028 at a CAGR of 7.87 per cent between 2021 and 2028. Key suppliers include Autoliv, ZF, Joyson, Toyoda Gosei, JTekt, and Mobis..

Here's a look at what some of these companies are doing by way of steering wheels, well as a perspective on the future.

ZF

From the outside, next-generation steering wheels are multifunctional, communicative, and emotional. Inside, there are sensors, software, and electronics. ZF strives to make this important control instrument fit for the future.

On this central control element, the familiar steering wheel buttons can be imitated in virtually any function, shape, and color. ZF says the automaker will decide about the exact function, so ZF offers significant design flexibility. As a result, a single steering wheel system could soon be sufficient for automakers to differentiate models within their range.

HYUNDAI RENDERING IN DVN INTERIOR NEWS

New display and illumination options can also be found on the rim surface; they can help promote safety and clear communication between the vehicle and the human driver. For example, by sending supplementary warning signals when the electronic assistants detect danger. Or by signaling with red light during automated driving that the human driver must resume control of the vehicle. Whether the driver grabs the steering wheel is detected by the steering wheel rim with the Hands On/Off Detection (HOD). In passenger cars, this is already state-of-the-art; in trucks, it will be coming soon.

The steering wheel illumination will be almost as important for the interior design as it is for safety. These features are particularly popular in Asian markets.

Software is the basis for the buttons and displays being configured individually, whether by an automaker or by drivers. It provides the basis for displaying on-demand functions. Integrated software is designed to ensure that the steering wheel and the other HMI systems in the vehicle communicate smoothly.

Sensor mats under the cover enable the HOD function. Advanced steering wheels do this across several zones. They not only recognize whether the driver grabs the steering wheel, but also where. ECUs process the information and send commands.

While no ZF logo is visible, every fourth new passenger car is equipped with a ZF steering wheel.

Autoliv

AUTOLIV IMAGE

Steering wheels are an important element of Autoliv Safety Solutions, along with airbags, seatbelts, inflators, and more.

Electrification and auto-driving are raising the bar for steering wheels of the future. Autoliv hands-on detection uses captivating mechatronics integration and driver monitoring systems to ensure that the driver remains in control in autonomous driving.

The steering wheel is an integral part of the restraint system, as the driver airbag is located in the hub of the steering wheel and the performance of the airbag in a crash will depend on the steering wheel design. The driver airbag and the steering wheel should also look like one integrated unit. The colors should be identical with no gap between the airbag and the wheel. The latter is difficult as the airbag cover is usually floating as it incorporates the horn function.

Steering wheels must meet a broad variety of requirements in term of both safety and design.

The base of a steering wheel consists of the skeleton, made from a strong metal such as magnesium, aluminum, or steel. The skeleton is covered by a highly durable, soft, foam material, usually polyurethane.

To improve the look and feel of the steering wheel it can be covered by leather or wood. The leather cover is handcrafted and it can take up to an hour for one operator to sew and glue the leather on a foamed steering wheel.

Some Autoliv steering wheels have an integrated electric motor that can vibrate—like the miniature one in a smartphone—to alert the driver of a dangerous situation. To improve comfort in cold climates, the steering wheel can have a heated rim.

Joyson

Joyson Safety Systems is headquartered in Auburn Hills, Michigan, with a global network of about 43,000 employees in 25 countries generating annual sales of about $5bn. It is a subsidiary of Ningbo Joyson Electronic, after Key Safety Systems took over Takata after faulty airbags bankrupted that company.

Ningbo Joyson Electronic operates in two segments, automotive electronics and automotive safety. They offer cockpit and automotive connectivity systems, intelligent driving, and new energy management products, as well as software and related services; and seat belts, safety airbags, intelligent steering wheels, and integrated safety solutions. The company was founded in 1992 and is headquartered in Ningbo, China.

They make steering wheels from die-cast magnesium or alloy steel frames, foamed with urethane foam, leather wrapped, and finally assembled with high vertical integration.

Multifunctional switches and decorative parts such as wood elements and carbon fiber parts are manufactured at Joyson to individualize each steering wheel design. Advanced functions like rim heating, hands-on detection, lighting elements on the steering wheel rim, and vital-sign sensing can be combined with any surface material.

Joyson uses polyurethane in the production of its steering wheel base for optimal feel and comfort. They also produce steering wheels with water-based low-emission foam, which is easy to process for a variety of scratch-resistant, desirably-textured surfaces.

Driving assistance and automated driving systems require more precise collaboration between the driver and the car. The steering wheel and the integrated possibilities of functional recognition are an integral part of enabling innovative automated driving concepts. For example, hands on detection already supports the required functions to fulfil the regulations for autonomous driving functions such as lane-keeping assistance.

Based on the support for regulations for automated driving and added functionality, Joyson offers several sensing options at the steering wheel, such as several hands-on wheel detection options. This system is a capacitive based system to detect touch and grip of the drivers' hands. The capacitive sensor layer is placed under a foam or leather layer. The system based on a mat and an ECU which offers all the functional safety features required and the highly integrated development ensures the best quality for steering wheel integration.

In addition, Joyson is working on multi-sensing options, like vital-sign monitoring to assess driver workload and state by electrocardiogram measurement. Forthcoming models will include electrodermal activity sensing.

As the steering wheel is the handshake of the car to the driver, multifunctional steering wheels include switches for controlling infotainment and advanced driver assistance systems. Joyson uses switches from a variety of suppliers, and as part of the Joyson Electronics Group they provide customers with latest switch technology including force based touch control and active haptics which also serve as visual feedback systems.

Light elements integrated in the steering wheel rim can support frontal collision warnings, indicate autonomous driving modes, or warn when hands have been removed from the steering wheel. Especially at the 12 o'clock position of the steering wheel rim, the light element is in the peripheral view of the driver and can significantly reduce reaction times.

Steering wheels are shrinking

For a clearer view of the displays, or for more space and better driver sightlines, or both, the steering wheel diameter continues to shrink. Since the 1950s, power steering systems have enabled ever-smaller steering wheels. Steer-by-wire is enabling much more wheel shrink, for the road wheels and the steering wheel are no longer mechanically connected. The steering wheel does not move while an automated system is in control. Instead, the electronically controlled actuators take care of the road wheels' orientation. As a result, the steering wheel shape no longer has to follow the traditional steering function.

Near Future

Steering wheels of the foreseeable future will remain round to rectangular, with all variants in between: squircular, partially-flattened, oval, asymmetrically round, octagonal, oblong. These closed steering wheel rim shapes have proven successful over many decades' time; they are familiar, easily usable, intuitive, and ergonomic. The space within the rim will change significantly; however, with various control elements.

With the introduction of ADAS systems and vehicle automation, an interface informing the driver of the automation state is required. Research work is demonstration how visual cues on steering wheel improve users' trust, experience, and acceptance in automated vehicles.

Recent related articles in DVN Interior:

Preh's Steering Wheel Of Tomorrow

Mercedes' New Smart Capacitive Steering Wheel

MIVI Steering Wheel Is Vehicle UI

Interior News

Intellias: Seamless HMI, Digital Cockpit, ADAS

INTERIOR NEWS

MERCEDES-BENZ IMAGE

At CES 2024 in Las Vegas next month, Intellias will show off their expertise in HMI, digital cockpit, and ADAS integration. Based in Chicago and Munich, Intellias provides software engineering services across a variety of industries—including automakers and suppliers. They will demonstrate their newest automotive portable kit (IntelliKit). It is based on the Qualcomm SA8295P Snapdragon Automotive Cockpit Platform, and integrates Rightware's Kanzi One HMI kit and BlackBerry IVY Connected Vehicle Data Platform.

Intellias describes IntelliKit as a fully functional digital cockpit prototype that demonstrates the seamless integration of diverse hardware and software components using the latest frameworks and tools.

In the era of the software-defined vehicle, a major challenge for automakers and suppliers is to create a unique experience for users while meeting high standards of safety and comfort. Intellias says they have already implemented a great number of successful projects with well-known partners in the industry.

In October the company was awarded the Global Enabling Technology Leadership Award 2023 for connected infotainment and navigation software by Frost & Sullivan.

VW ID.7: The E-Passat?

INTERIOR NEWS

VW IMAGES

VW is positioning their new ID.7 midsize electric sedan to lure frequent drivers away from their previous diesel Passats.

The rear of the cabin offers 'Business Class' appointments, with giant legroom. And the ID.7's luggage capacity is tops.

In the interior, everything is focused on the huge 15-inch central screen, with just a small display ahead of the steering wheel to provide the speedometer and other crucial displays.

An AR-HUD is standard equipment; it projects all relevant information onto the windshield. The layout of the cockpit appears thoughtful and tidy. The gear selector has been moved to the right of the steering wheel, to free up space on the center console for small drink bottles and wireless smartphone charging.

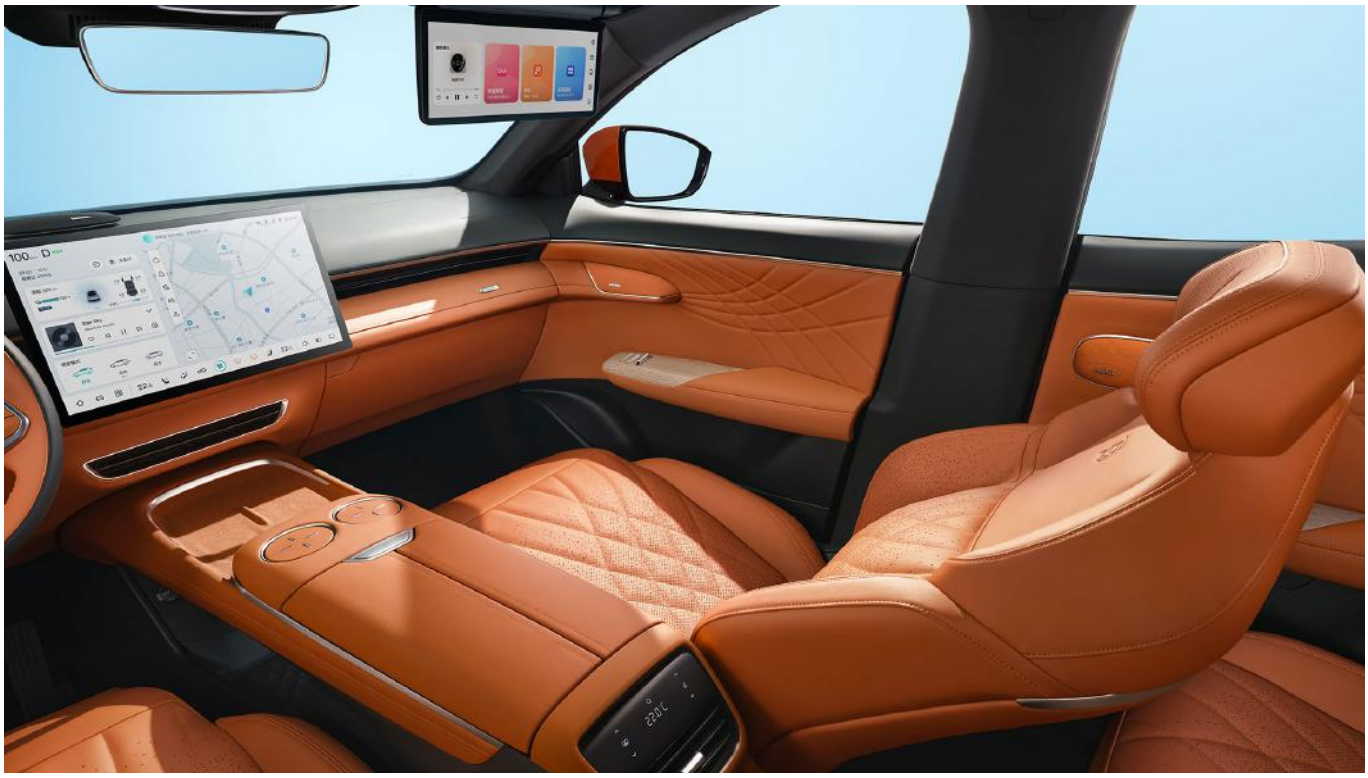
A large center compartment between the seats also serves as an armrest. There is intelligent voice control—for example, if you say, "My hands are cold", the steering wheel warms up, the air registers shift handward, and soon your hands are no longer cold.

The ID.7 has a robust L^2 electronic assistance package: it maintains the lane and the distance to the vehicle in front, recognizes traffic signs, and adjusts the speed in good time before the exit.

There's a giant panoramic glass roof and 'ergoActive' seats, with automatic climate control and a back massage. They have been certified by the German Campaign for Healthier Backs (AGR).

Deepal ?? Has Foldable Sun Visor Display

INTERIOR NEWS



DEEPAL IMAGES

In Chinese, 午睡 means "noon sleep"—that is, a midday nap, strongly encouraged among students and young professionals in China. So Deepal, a premium NEV marque from Changan, is equipping their EVs accordingly.

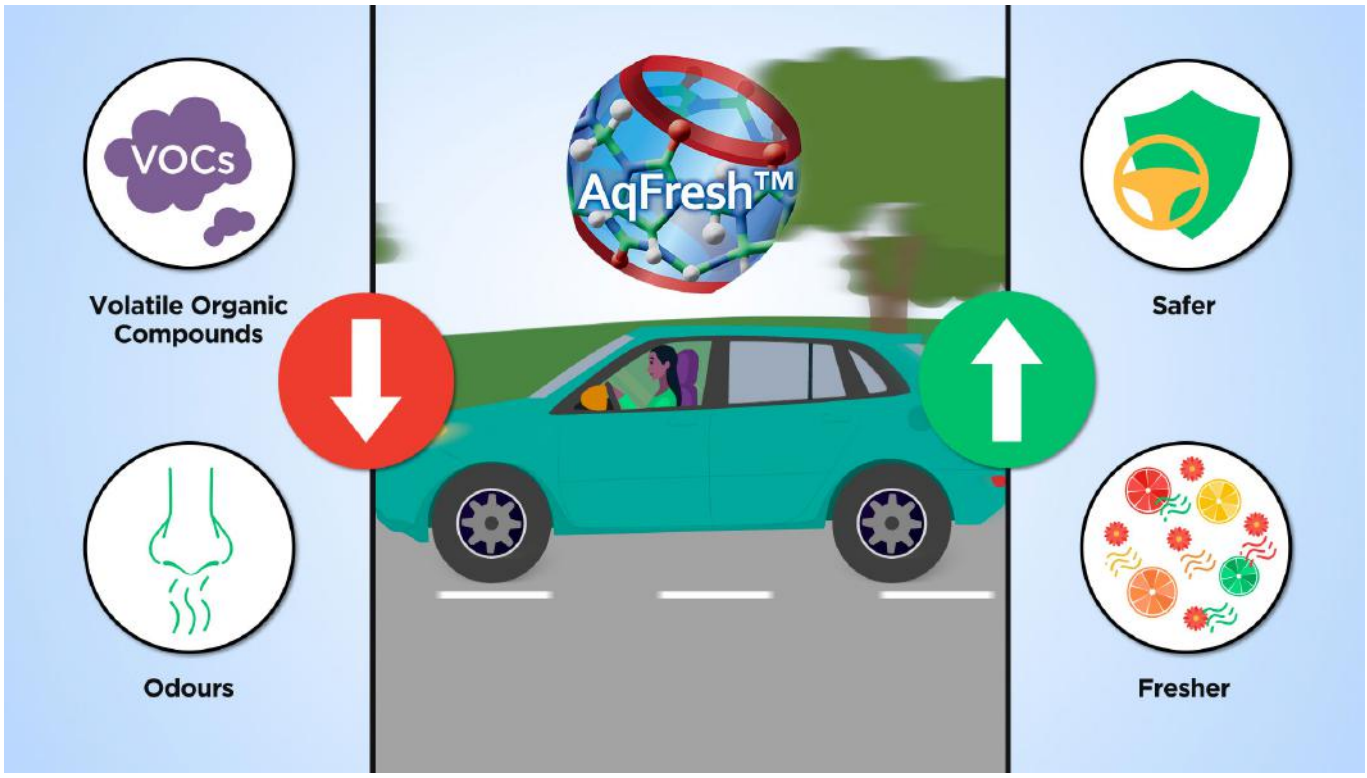
A reclining passenger seat is not a new feature, but Deepals also offer a foldable screen in the sun visor area, adding an entertainment display to the sunshade. Users can unfold it with a physical button on the passenger door, or control it with a voice command.

Changan says it improves the user experience by allowing the passenger to view the screen's content without moving their head from their nap position in the reclined seat. No word on how a *napping* passenger might view infotainment stuff through their closed eyes, but then again, there are naps and then there are naps.

In addition to an L^2 autonomous driving system, there is a 15.6-inch central screen running an in-house OS capable of supporting Apple CarPlay and Huawei HiCar, the Chinese alternative to Android Auto.

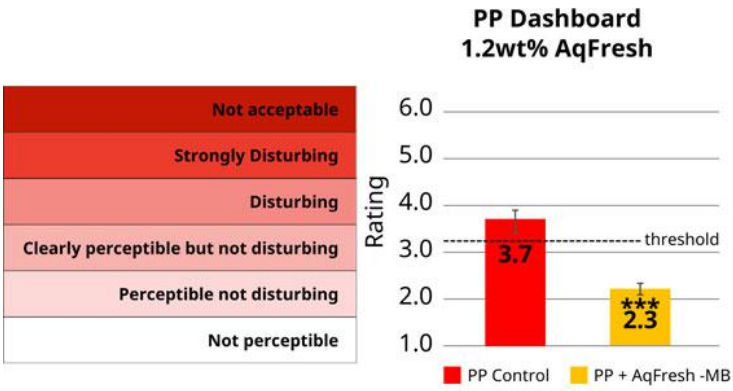
Recycled-Plastic Smell Complicates Meeting ELV Directive

INTERIOR NEWS



AQDOT IMAGES

The proposed new EU ELV (end-of-life vehicles) directive requires automakers to build cars with at least 25 per cent recycled materials by 2030. But something must be done about the bad smell from recycled materials. Specialist company Aqdot, in the UK, has a solution they say slashes odors from recycled-polypropylene dashboard parts, which emit much less VOC; fully 1.5 points lower on the industry-standard VDA-270 C3 tests.



As **we reported in late 2022**, Aqdot's AqFresh technology uses cucurbiturils—barrel-shaped molecules with a unique symmetrical structure of a hollow, hydrophobic cavity and polar portals—to capture and eliminate unwanted molecules.

It has a broad range of applications, and is being formulated into a wide range of car parts including rigid plastics for dashboards, coated textiles for car seats, and nonwovens for headliners.

Covestro, HiPhi Launch Sustainable-Materials Lab

INTERIOR NEWS

HIPHI CO-CTO DR. CHEN JUN (L); COVESTRO CEO DR MARKUS STEILEMANN (R) (COVESTRO IMAGE)

The entire automotive industry is making intense effort toward decarbonization, and innovative materials are a major part of the solution. Covestro and Chinese EV brand HiPhi put together a joint laboratory to work on commercializing low-carbon materials; establishing apposite standards, and developing 'smart' surface and battery technologies.

THE HIPHI Y HAS ADVANCED COVESTRO POLYCARBONATES, NOTABLY IN THE HEADLAMP AND LIDAR LENSES. (COVESTRO IMAGE)

HiPhi founder and CEO David Ding says, "We are accelerating the adoption of intelligent and low-carbon technology in smart EVs to provide global users with a safe, efficient and sustainable travel experience, thereby changing the future of mobility and contributing to society. Covestro's advanced material expertise is key to helping us achieve this vision. The establishment of our joint laboratory stems from Covestro's recognition of the innovative strength represented by HiPhi and other Chinese companies".

And Covestro engineering plastics president Lily Wang says, "We hope to collaborate with more like-minded companies, like HiPhi, to accelerate the decarbonization trend and pioneer smart technology development at the same time".

Obigo, 3SS Partner to Enhance In-Car Entertainment

INTERIOR NEWS

3SS IMAGE

3 Screen Solutions—3SS, based in Stuttgart—and Korea-based Obigo have agreed a strategic collaboration, integrating Obigo's in-car browser with 3SS' 3Ready video entertainment platform. The two companies aim to facilitate automotive manufacturers, content providers, and consumers benefitting from enhanced in-car entertainment.

The Obigo browser, embedded in millions of vehicles globally, is now integrated with 3Ready to enable a broader audience to enjoy 3SS-powered entertainment offerings. The companies say their collaboration will ensure a swift product rollout for automakers; mitigate risks, and tackle technical challenges unique to the in-vehicle environment.

The 3Ready Automotive platform's service configuration and user interface are customizable based on the automaker's specifications; they can access the 3Ready entertainment platform through the Obigo browser or opt for a standalone entertainment app based on 3Ready, available in Obigo's recently launched app store.

Kia EV9 Has EV-Optimized Meridian Audio

INTERIOR NEWS

KIA IMAGE

The new Kia EV9 luxury SUV, launching for model year 2024, will come with a sound system designed and tuned specifically for the audio characteristics of a pure EV.

Developed by England-based Meridian Audio, the 14-speaker system uses proprietary DSP (digital signal processing) techniques optimized for the challenging acoustic environment inside an EV. Meridian RE-Q optimizes the audio system to the precise acoustics of the vehicle cabin, while Meridian Digital Precision maximizes the signal-to-noise ratio. Meridian Horizon—an upmixing technology—provides multi-channel audio from both two-channel stereo and native 5.1 content, delivering a surround sound experience complete with center image and ambience level controls for the user. Meridian Intelli-Q Data-Driven Equalization optimizes audio by responding to the changing nature of the in-car acoustic environment as vehicle speed changes.

Meridian Audio CEO John Buchanan says, "The challenge with delivering a fantastic audio experience in an EV isn't the level of the background noise, it's the complexity of noise sources and their frequency profiles. These are typically at significantly higher frequencies than in a combustion vehicle, which can affect our ability to perceive the position of sounds, and they can be more random, which makes the acoustic environment more difficult to manage with active noise cancelation".

The solution, he says, is to move the focus from hardware to software, managing the acoustic environment through Meridian's proprietary DSP algorithms and other DSP techniques to tailor the sound to the requirements of the specific vehicle, and to the tastes and activities of the vehicle occupants.

An open-air connected subwoofer (OCS) in the EV9 eliminates the need for a large box enclosure. Conventional enclosures require substantial packaging volume and can create resonances and rattles; they also limit frequency extension and timing. The combination of the OCS and Meridian's tuning techniques does away with these issues, providing fast, precise, and deep bass performance for all seating positions.

Axiom Chip for Genesis GV80 HVAC

INTERIOR NEWS

HYUNDAI IMAGE

TouchNetix, based in Norway, specialize in advanced touch solutions. Their Axiom technology has been selected by Woory Industrial—an auto parts company headquartered in South Korea—for the newly released Hyundai Genesis GV80. The Axiom AX54A chip operates the HVAC touch and force controls in the center console.

The chosen chip manages performant multi-touch and force sensing. Force-sensing avoids accidental user interaction; it requires users to definitely make their intent known to operate the HVAC controls. The single-chip Axiom solution for touch and force sensing saves space on the PCB, and reduces build cost while providing a safer, more intuitive user interface in the car.

But wait, there's more! The AX54A delivers additional features including 3D proximity and hover sensing, enabling air gestures; multi-force sensing and low-latency haptic triggering; integrated support for passive and active dial-on-display; support for curved shapes, thick lenses and finger-guide overlays; compatibility with surfaces including wood, plastic, foam, and leatherette, and parallel multi-touch and multi-force, enabling systemic redundancy.

The Design Lounge

Does the Steering Wheel Have a Future?

THE DESIGN LOUNGE

COFFEE CORNER
DVN
Interior

By Athanassios Tubidis

RENAULT FORMULA 1 RS 2027 VISION (RENAULT IMAGE)

I always found this question a bit misleading because it identifies the steering wheel (as well as the gearstick, levers, pedals, various types of switches, and analog gauges) as the location of the human-machine interface while driving. Since HMI is the connection of a person to a machine, it creates an overlapping, often contradictory technical claim. The real questions to ask are why HMIs are still so strongly committed to the past, and why they so often tend to resemble the physical world.

Cruising through an empty country road somewhere in the Alps at the beginning of autumn is definitely an irreplaceable feeling—through forests and villages, inward and outward turns, right at the focal point of a dreamlike landscape with its stunning perspectives and sightseeing. The experience, which hardly can be exceeded by anything else, conforms to such a paradigm while thinking about user interfaces in the automotive domain. The description of the journey alone implicates an optimal mobility scenario involving most likely a GT car, possibly classic, with outstanding performance, sound and feel, and a manual shift. The smell of the interior includes high-quality vintage exotic wood veneers and most noble leathers, double-needle hand-stitched in Italy, mixed with the fresh air of the mountain during the blue hour before sunset. While this image is fading away, we have to admit that this is barely the situation that user interfaces are made for—and yet often, inspired by.

To the opposite, user interface should be designed to help people manage their tasks under worst-case, ordinary scenarios such as rain, traffic jams in daily commuting, or driving under time pressure in a highway convoy. A digital tachometer made in a circular form is a design choice, and there is nothing wrong with that. In addition, if graphics are well executed, it could also be helpful and effective thanks to a subconscious cohesion. But why does it have to look like its physical counterpart on steroids with overemphasized 3D features, drop

shadows, highlights, and reflections, despite all efforts to suppress distractive elements? It might be that along the design process, CGI became the purpose instead of a tool.

‘Taking the steering wheel’ means taking control of the entire vehicle, not just the steering; becoming driver instead of passenger. Thus, it is the difference between heading towards the destination and how to stay on track. The notion of controlling the appeal of the whole journey makes the steering wheel not just the main driving tool, but the symbol of imminent change of direction according to our primary reflex and relation to the territory and our proximity. Even if we were to perform mobility in a fully automatic mode, the human factor still matters—not for sentimental reasons, but to sustain mastership upon anything technical.

The contradiction is quite evident between the information-industrial-age concept of interface and the current setup of human-machine interaction, after a century of automotive development. Dashboards, for instance, that are still dominated by circular analog gauges, nowadays puzzlingly as screen graphics, suggest how a retromod-like approach is overwriting substantial innovation in this domain. Besides, providing a USB-port underneath the dashboard and a touchscreen does not contribute to a forward oriented mindset either.

Mobility is apparently, for most of us, much more than just moving from A to B. Our curiosity compels us to movement and quite simultaneously to a perception of what’s coming as a parallel intellectual journey.

The interface is placed between reality and the user. It currently represents this reality with a dashboard, understood as an interactive image (a graphical user interface). The dominance of visual content per unit of time turns out, now, to be the issue, while the user’s dynamic and body-based potential is ignored. The inherited space-time behavior is not taken in consideration.

New design interfaces intend to change the loop and develop, or optimize, the user’s behavior and respectively behavior patterns. As motion capture systems (body-, head-, and eye-tracking) permit us to model human behavior, the emerging era is designated as an age of ambient interaction. The user, as a car resident, will be still acting in their own environment, which becomes the tool.

Do we first define our behavior patterns or shape our tools? For instance, steering wheels.

News Mobility

Mahle Positioning System Is Global Standard

NEWS MOBILITY

MAHLE IMAGE

Stuttgart-based Mahle is a €12bn auto supplier, with a broad range of products. They've developed a positioning system with which an electric vehicle can be precisely aligned above a coil in the floor, for inductive (wireless) charging. And SAE has now selected this system as their standard solution for wireless charging.

To effectively deploy wireless charging for EVs, infrastructure and vehicle components must be standardized—just like the shape and size of gasoline and diesel nozzles (infrastructure) and fill pipes (vehicle).

Mahle has long been developing wireless charging infrastructure, and SAE International—a US-based automotive standards development body—selected the Mahle positioning system as the basis of their SAE Standard for for wireless EV charging.

The Mahle positioning system, called DIPS for Differential Inductive Positioning System, is based on a magnetic field and automatically establishes a connection with the controlled charging point as the EV approaches. A special navigation system in the vehicle display assists the driver to bring the car into the ideal position. The charging process starts automatically. This also works with an autonomous parking vehicle, where the parking system (rather than a human driver) receives the necessary positioning instructions.

Mahle Head of Corporate Research and Advanced Engineering Dr. Harald Straky calls Siemens and Witricity "two strong partners at our side with whom we are jointly advancing the complete system of charging infrastructure and automotive engineering".

L3 Vehicles Can Self Drive up to 130 km/h in Germany

NEWS MOBILITY

MERCEDES-BENZ IMAGE

Since January 2023, autonomous vehicles may travel at speeds of up to 130 km/h on motorways in Germany; previously, a maximum of 60 km/h was permitted—this after UN Regulations were adjusted to allow the higher speed in June 2022.

So far, Mercedes-Benz has fielded L^3 vehicles, and they've come closest to taking advantage of the new permissions, but no production car self-drives at the new top speeds yet. The Mercedes autonomous-driving vehicles are approved only for up to 60 km/h, and are restricted to freeways and certain suitable stretches of road.

Other makers—Audi, Porsche, Volvo, and BMW—have also announced L^3 vehicles. However, it is still unclear when any vehicle will actually, really drive itself at motorway speeds. Manufacturers are likely to approach the new limit cautiously. The main application for L^3 technology so far is to relieve the driver in traffic jams or slow-moving highway traffic: while the vehicle itself steers, brakes and accelerates, the driver can turn their attention away from the traffic. Activities such as reading or eating are possible during this time. Sleeping, on the other hand, is not permitted, as the driver must immediately take over the wheel when the system stops.

General News

Ford Otosan's Upgraded Plant Opens in Turkiye

GENERAL NEWS

FORD OTOSAN IMAGE

Turkish joint-venture car manufacturer Ford Otosan—the second-largest industrial company in Turkiye—has invested €2bn in expanding and upgrading their Kocaeli site, which includes the Yeniköy plant. Ford Otosan is a publicly traded (18 per cent) company, where Ford Motor and Koç Holding have co-equal shares of 41 per cent each. With solar technology, AI management, and low-noise production lines, the Yeniköy plant represents the current state of development, the manufacturer says. The Group is aiming to achieve CO_2 neutrality with all Turkish production facilities by 2030. In 2025, Yeniköy is expected to reach its full production potential with 405,000 vehicles per year.

Ford Pro Europe General Manager Hans Schep says, "As one of the most efficient automobile production facilities in the world, it sets new standards for the mass production of commercial vehicles with different drive systems". Ford is combining real-time data and AI technologies to create a virtual production simulation for vehicle production. This 'digital twin' is meant to help organize processes in the plant more efficiently.

Ford Otosan is producing the latest generation of the Ford Transit Custom and Tourneo Custom at Yeniköy; the electric E-Transit and E-Tourneo versions will be launched next year.

Huawei’s First Car Has 100k Orders

GENERAL NEWS

Huawei Aito says they have received 100,000 firm orders for their M7 SUV, six weeks after the EV launched on 12 September in China. Aito is a new Huawei EV brand, contract manufactured by Seres; the M7 is their second model.

Seres is a brand under Chinese state-owned Dongfeng, and the M7 is assembled in their Chongqing factory, dedicated to Aito production, which went operational in July 2022. The plant’s annual production capacity is 150,000 units, and the production capacity of M7 is currently about 700 units daily.

In September 2023, Seres announced the Seres 7, a rebadged Aito M7. Due to western markets' distaste for the Huawei brand and the Chinese values and politics it represents, Seres removed all Huawei logos and traces on the hardware and software; perhaps that will fool westerners hostile to Huawei.

The new Aito M7 is a large 5-seater SUV with 5020L × 1945W × 1760H mm dimensions, and a 282-cm wheelbase. It is an EREV (extended-range EV), so it comes with a 40-kWh ternary NMC battery from CATL, which is suitable for the 240-km CLTC range or 1,300-km combined range with a full 60L fuel tank.

All versions have a 1.5-liter engine not connected to the wheels; it only charges the battery.

Logos or no logos, There is a great deal of Huawei software inside. Of course, it comes with HarmonyOS, but mainly, the M7 features an ADAS which Huawei claims can navigate highways and cities without HD maps; they say by December it should support navigation-assisted driving in all Chinese cities.

Huawei is now leveraging their established network of hundreds of showrooms and retail stores to present cars next to mobile phones.