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Weekly Newsletter

DVN
Lighting & ADAS

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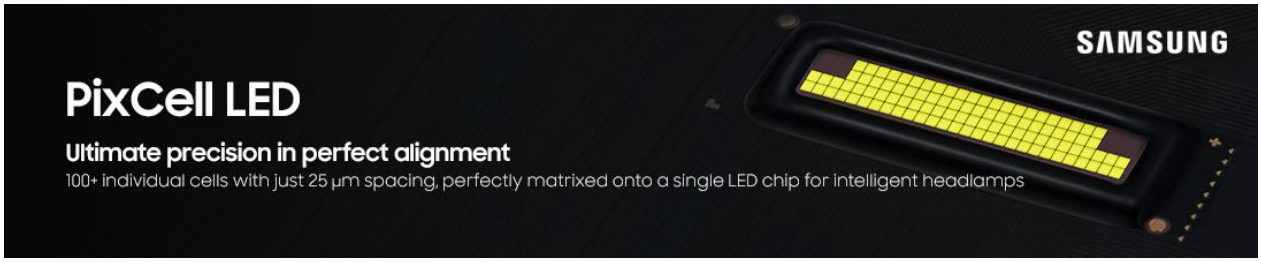

Editorial

Plastic Omnium: Shifting Into High Gear

For this week's fourth in our series of chief-executive interviews, I talked with Plastic Omnium CEO Laurent Favre, and the company's innovation director Michael Rosenauer. After presenting his core values, Favre told me about his company's fantastic growth over two decades' time. He described the course he's steering for Plastic Omnium to become more of a solutions provider than a product provider. And their lighting activities are really something, covering not only the traditional exterior lighting business but also body lighting; projection, and interior lighting. Rosenauer, for his part, talked about increasingly-important OTA technology and the opportunities they'll bring for lighting.

I really enjoyed crafting this article to share my intriguing peek at Plastic Omnium's exciting innovations, and I am happy to share it with you.

All my apologies to Audi's Stephan Berlitz, head of lighting at Audi for the wrong picture on the news presenting the Audi award for Digital matrix Light by the magazine Auto Motor und Sport.
The right picture is below

STEPHAN BERLITZ WITH 2 AM+S JOURNALISTS (AUDI PHOTO)

Sincerely yours,

In Depth Lighting Technology

DVN Interview: Plastic Omnium's CEO and Innovation Director

DVN had the chance to ask questions to Plastic Omnium's CEO Laurent Favre, who is busily integrating AMLS and Varroc in a new lighting activity.

Laurent Favre has 26 years' experience in the automotive industry, working mostly for leading tier 1 suppliers mainly in Germany.
He loves what makes the automotive industry so unique, and especially in the current times: the speed, the level of excellence, the permanent need to improve, the innovation and the pressure.
When he is in France, some people tell him that he is too German: very structured, extremely demanding in execution and operational excellence. And when he is in Germany, some people pretend that he is a real French guy: very passionate and impatient.

Ambition, courage and respect are the three values he strongly believes in.

“Ambition is the engine we all need to be willing to continuously improve, to be never satisfied, to aim to be always number 1 in everything we do, to aim for excellence.
“**Courage** is how we act, taking fast decisions, accepting failures, being entrepreneur and going for new ways.
“Respect is how we behave, creating safe working conditions for our employees, encouraging different opinions and perspectives, but also acting responsibly because our development cannot be at the expense of the planet. Here's our conversation:

DVN: Tell us about Plastic Omnium. What are the facts and figures, the prominent activities? What is the new organisation of the company?

LF: Plastic Omnium has a fantastic history of growth: outperforming the market; managing the portfolio to become a pure automotive player and managing growth through M&A and organic growth.
Over the past 20 years, the group's sales have grown from €1 billion to €8 billion today. With a global presence of 137 plants and 31 research and development centres, Plastic Omnium is leveraging our 30,000 employees to meet the challenges of clean and smart mobility.
On this solid foundation, we have been able to position ourselves in the mobility of the future and make the necessary investments to strengthen our position in the growth sectors of lighting; hydrogen and electric vehicles. A new Plastic Omnium is taking shape: innovative and technological. And of course, sustainability has always been and will remain at the heart of the group's strategy.
Since 2015, newcomers have entered the market, especially in the field of electrification, and Plastic Omnium has been able to manage growth not only with traditional automakers, but also with these newcomers such as Tesla, Rivian, and Lucid, proving our ability to anticipate and adapt to their needs by having the right technologies to support them in their growth.
At the end of this year 2022, a new Plastic Omnium will emerge with a brighter product portfolio. Plastic Omnium will be bumpers; modules; fuel storage systems—our traditional businesses, to which lighting; hydrogen, and electrification will be added.
Looking ahead to 2030, the group will reach a turnover of at least €15 billion, almost double what it is today. By then, 40 per cent of sales will come from technologies that are not currently part of Plastic Omnium's portfolio. This demonstrates our ability to take full advantage of market change.

DVN: What are PO's strengths?

LF: We strongly believe in independence; innovation, and investment.
As a family-owned company (60 per cent by the family who created Plastic Omnium in 1946) managed very wisely since its foundation and has a sound and stable shareholder base, the group can rely on a solid financial profile that allows it to actively address these difficult times in the market and invest in the future.
Plastic Omnium has always been able to finance growth by keeping a very low level of debt, and this is also the ambition for the future: we want to self-finance our growth and remain independent. We understood early on that our growth will no longer be based on volume, but on value and content per car. We can rely on our technologies, which are gaining in importance in the vehicle value chain, and we can benefit from the changing market thanks to our excellent positioning.
Plastic Omnium are becoming more of a solution provider than a product provider. We are not afraid to innovate. Since 1975, Plastic Omnium have reinvested on average more than 80 per cent of our results in the company. We think and act for the long term, which is very important in today's changing times. We manage the short term in order to be forward-looking and able to invest and create value for the decades to come. Plastic Omnium leads in all our traditional businesses—bumpers, modules, and fuel storage systems.
Tomorrow, we will invest in technologies that will strengthen these leadership positions and benefit from market changes, such as lighting. The lighting market is growing and is the focus of our strategy as we also see synergies with our current portfolio with our bumpers and modules. Our strategy is clear: we combine lighting with our traditional businesses, bumpers and front-end modules. We are the only ones in the market who can provide such an offer to our customers, who want us to integrate more and more functions and become a solution provider. Plastic Omnium is a big asset for customers: we develop solutions that they don't have today.

DVN: You've been actively increasing PO's lighting activity, buying AMLS and now Varroc Lighting Systems. Can you tell us what you have in mind?

LF: We want to become a top player in the lighting business.
We will write a story of growth and synergies. Varroc Lighting Systems (VLS) and AMLS will work together and become one new division: Plastic Omnium Lighting. Not to mention that integrating companies is part of Plastic Omnium's DNA: we know how to integrate because mergers and acquisitions have always been part of our growth.
VLS are a large company, one of the top 10 in the automotive lighting market, with a good footprint and significant engineering capacity. AMLS are a very innovative and fast-growing company that has many innovations in their portfolio. Thanks to these two integrations, Plastic Omnium will have access to a strong asset base with 11 plants, 12 R&D centres and 7,000 employees as well as a large geographical footprint with a strong presence in Europe, America, and Asia.
In the coming years, our strategy will be based on two pillars. First and foremost: building up the new Lighting division; leveraging the synergies between the two companies and bringing in Plastic Omnium's assets: operational excellence; customer proximity, strong know-how in purchasing and manufacturing. Our goal is to build an independent and profitable division within three years. Then we will grow and accelerate the market by benefiting from the strengths of both companies: the innovations of AMLS and the strong manufacturing and engineering capabilities of VLS.

We will reinforce the clear complementarity between the two companies: VLS products can be boosted by AMLS. Adding the portfolios from VLS and AMLS, Plastic Omnium will cover the most important automakers in the world. Our target is €1.5bn in sales by 2027.
Ultimately, Plastic Omnium will bring something new to the lighting market: a new product offering ranging from light engines to complete headlamps, covering the traditional exterior lighting business but also body lighting, projection solutions, and interior lighting. We will serve all lighting needs of the automotive market.

DVN: Obviously, you have great expertise and experience in front-end assemblies. How do you see that helping the new company?

LF: HBPO (Hella Behr Plastic Omnium) are the global leader in complex modules, producing one in five of all front-end modules worldwide. With sales of €2.2bn and a market share of 18 per cent in 2021, HBPO produce five million front end modules per year. Five million! Customers are focusing more and more on the design of the vehicle, thinking of the powertrain of the future. This will open up new growth opportunities for Plastic Omnium, as they will increasingly outsource their complex modules to us. Customers need to get rid of complexity and Plastic Omnium love complexity; we have known how to manage complexity for decades. This will certainly be an advantage for the growth of our new Lighting Division.

DVN: Three great groups involved in vehicle lighting are now present in France. Do you consider this an advantage or an inconvenience?

LF: What matters is the technological positioning. Once again, Plastic Omnium are the only supplier in the market that can integrate everything in one solution, combining lighting with our traditional business areas bumper and front-end module. We will become a key solution provider to our clients.

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Then DVN took the opportunity to talk with Michael Rosenauer, Plastic Omnium's innovation director.

DVN: How do you foresee vehicle lighting changing with the arrival of EVs and AVs?

Michael Rosenauer: Both developments offer great opportunities for lighting, because lighting will play a key role in these evolutions. With the development of EVs, for example, the original purpose of the grille becomes obsolete. Designers can therefore rethink the front of the vehicle. An important means for this new front design will be light and its integration into the bumper in form of body lighting or hidden until lit features. Looking at AVs, light will serve two aspects: The communication of the vehicle to its environment on the outside and the creation of a more pleasant atmosphere and even entertainment in the interior.

DVN: What are your thoughts on vehicle interior lighting?

MR: Recently we came across the quote, "When it comes to car design, the interior is the new exterior"—and we agree. From simple illumination and reading lamps, interior lighting is evolving more and more to a distinctive feature for automakers. Modern concepts take into account its ability to create an appealing ambience and increase comfort, but also to support safety functions and even provide entertainment. We will move from simple ambient lighting to an overall experience. With the expertise that especially the former AMLS team brings in, Plastic Omnium will actively shape this development. The projection solutions the team developed, for example, can be used to project warning signals into the cockpit in situations where the driver's perception is limited, but also to extend the welcome scenario from outside the vehicle to the inside. Imagine a wave that starts in front of the driver's door when the driver unlocks the car, then moves to the inside of the driver's door and from there across the dashboard and centre display to the passenger door—all seamlessly.
With our digital projection solutions and the appropriate architecture to control this complex staging, we can make applications like this possible.

DVN: Clearly there's a trend toward whole-front illumination, including grilleboards as radiator grilles are obsolete in EVs. What are your thoughts on the subject? Do you expect to handle the integration of sensors like lidar; radar, and ultrasonics?

MR: According to a recent study of Yole Intelligence, body lighting and interior lighting will be the applications witnessing the fastest growth after 2027. Body lighting or body shell lighting —the integration of light into the vehicle surface or its add-on parts—is an area to which we are particularly dedicated and where we want to fully leverage our combined expertise in exterior body parts, lighting, electronics and software. With the Smart Bumper and Smart Tailgate, Plastic Omnium already introduced a bumper and tailgate which integrates advanced sensors and lighting signatures for a new and more individualised design but also communication and safety purposes. Utilising the capabilities and know-how of Plastic Omnium Lighting, we will now jointly develop these products further.

DVN: We are seeing more concept and production cars with full-width, edge-to-edge front and rear lighting. Will it be a new standard, or is it just a fad?

MR: Edge-to-edge lighting at the front and rear is an important brand signature tool, mainly associated with EV brands, but we are seeing more and more brands using it, such as the edge-to-edge rear lighting in the new Porsche or Audi models, or the edge-to-edge daytime running lights in the new Volkswagen Golf 8. Together with the recent approval of illuminated logos in Europe, these features offer great potential for a new design of the front and rear of a vehicle, which we expect automakers to take advantage of. We have already received various concept inquiries on this.

DVN: What about front and rear light-based displays for communication? Front and rear lit logos?

MR: While the illumination of the automaker's logo and the illuminated grille are already permitted under certain criteria and taking up speed, the display of messages or warning symbols at the front and rear is not yet allowed worldwide. There are some exceptions in China, but in general we expect regulation to take a long time, as the first trials have only just begun. However, as we have already discussed, as we move towards automated driving, we will need solutions to communicate the vehicle's intentions or warn other road users, and lighting applications such as projections and displays will be the primary means of achieving this, which is why the topic will remain in focus.

DVN: Software is growing more and more important in lighting. Do you think OTA updates will create new business opportunities for lighting?

MR: OTA updates will definitely offer new business opportunities in vehicle lighting, especially in the aftermarket. Already today, end customers can, for example, unlock additional functions for front lighting over the air. In the future, they will be able to select additional colours for the car body or ambient lighting or new animation packages and individual content for the digital projection in the interior and exterior of their vehicle. By combining LED light sources with electronics, software and algorithms, our lighting solutions provide the basis for these functionalities.

DVN: We come back to you, Laurent. We're looking forward to your keynote at the VISION congress. Without revealing too much in advance, what's the main message you're hoping to transmit to the 600 expected attendees?

Laurent Favre: Our purpose is to drive a new generation of mobility. In addition to our commitment to hydrogen and electrification, we want to achieve this by driving a new generation of mobility lighting. The lighting market holds great potential, and we want to leverage this potential in a smart and innovative way. We are combining the strength and expertise of three strong companies to build a new, fully integrated and thus unique player that meets all lighting needs of the automotive market today and tomorrow.

Lighting News

Lights from Aspöck: From Fire Truck to Superbike

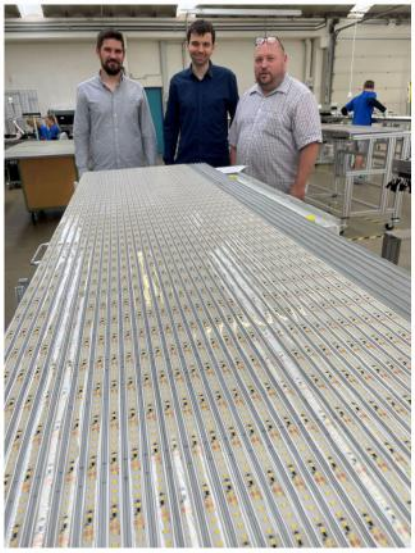
LIGHTING NEWS

SCHWAIGHOFER, RIEPL, NAGL, D.STRUBREITER, K. ASPÖCK

As part of our ongoing coverage of interesting smaller enterprises, DVN visited Aspöck in Peuerbach, Austria—not far from Linz. In Aspöck we found a hidden Champion. They're a family-owned business; the CEO is Karl Aspöck. There are 1,600 people employed, including 900 in Portugal. Production plants are also in Poland and Brazil. The revenue of Aspöck Group is about €230m.

Aspöck have positioned themselves as specialists for light systems for trailers (truck and passenger car); agricultural vehicles; fire trucks; construction vehicles, and caravans—all mostly including their own special wire harnesses. Rear lamps for commercial vehicles like the VW Crafter and Caddy; Opel Combo; Peugeot Partner, and Citroën Berlingo are also part of the business. Aspöck deliver about a million CHMSLs, mainly for Audi.
Another product line: rear lamps for the very successful (more than a million per year!) trailer-hook bicycle holders for passenger cars. Lighting for two-wheelers like the Ducati Panigale rear lamp and several KTM rear lamps and headlamps are also part of Aspöck's product range. Their range is extremely wide and interesting because of the many totally different customer specifications and highly specific solutions. Aspöck's engineers indeed need a very wide range of expertise.

14.5-M TRAILER INTERIOR LAMPS



BENJAMIN NAGL, DANIEL SRUBREITER, ERWIN STEINER

How long is the longest interior lamp you can think of? 30 cm? 50 cm? Aspöck's interior lamps for trailers are up to 14.5 metres long, produced in a one-piece continuous process including their wire harness with special truck connectors. Impressive, as you can see in the photo.

All in all, Aspöck supply many niches with a high demand to flexible technology, production, and logistics. Handmade wire harnesses with the total volume of a single digit are made alongside million-count CHMSLs and trailer hook carrier lamps. Congratulations from DVN to Aspöck for the ability to cover this wide span successfully!

Rutronik Congress: Dinner Inside the Great Barrier Reef

LIGHTING NEWS

DVN'S WOLFGANG HUHN

DVN was invited to give a presentation at the third Rutronik Automotive Congress in Pforzheim Germany last week. Rutronik are a successful distributor for active and passive electronic components, and they take a holistic approach in their business. This approach includes the nice congress with about 180 participants and a really great pre-evening dinner inside the Pforzheim Gasometer. The artist Yadegar Asisi transformed the Gasometer into the Great Barrier coral reef with a height of 30 m and a circumference of 80 m. What a great location! If you are ever close to Pforzheim near Stuttgart, you should visit it; it's open to the public.

The congress was opened by Uwe Rahn, Director of the automotive business unit at Rutronik. One highlight of the congress was the speech by TU München's Professor Victor Schaller, former head of BMW Motorbikes and later member of the board of MAN trucks. He gave a view to the future of the truck business with the focus on the drivetrains. Hard times are coming, he said, and lots of surprises are in store for us.

Audi's executive director Reinhard Prechler was interviewed by Peter Gresch about the integration of software in the new car platforms. Today's hardware and software comes from many different suppliers, working on different SOCs, and written in different programming languages. Failures are masking other failures. All has to be integrated and made to work together in the car—a very big and very difficult task, indeed.

16 presentations were given, all in all. DVN's Wolfgang Huhn's was called "The New Role of Lighting in EVs and AVs" which dealt with ADB; safety; the new front ends, and—of course—software. It is clear that the software-defined car will lead to software-defined lighting. We have to care. And we have to care now!
This is the reason for the title of the Paris DVN Workshop "Software Defined Lighting" to be held this coming 31 January and 1 February—which you should mark in your calendar!

PETER GRESCH

UWE RAHN OPENS CONGRESS

PROF. VICTOR SCHALLER

Hella FlatLight Gets First OE Order

LIGHTING NEWS

Hella have received an order for their innovative FlatLight concept, from an international car manufacturer. It's not only the first series order for this pioneering technology, but also one of the largest project acquisitions in Hella's rear combination lamp business in recent years. The FlatLight rear combination lamp is scheduled to go into series production as early as mid-2024. Hella's lighting managing director Yves Andres says "With the market launch of our FlatLight concept, we are taking rear combination lamp technology to a completely new level and setting entirely new standards in terms of design, functionality and energy efficiency".

The FlatLight | µMX technology, which Hella will launch in less than two years, is based on an innovative LED light guide concept with microoptics smaller than a grain of salt. This opens up numerous advantages: higher performance; more diverse design options, better integration into the vehicle. Thanks to the extremely shallow module depth, the required installation space is reduced by around 90 per cent—conventional systems require installation depth of around 40 mm, FlatLight manages with just 5 mm.

As part of the acquired customer project, brake and taillight functions are combined, for example. In terms of installation space requirements; homogeneity achieved; and efficiency, this cannot be realised with any other available solution. And FlatLight requires up to 80 per cent less energy than conventional LED taillights on the market, while maintaining the same high lighting performance and homogeneity.

Foxconn Model B Unveiled

LIGHTING NEWS

Foxconn's Foxtron Model B is a compact hatchback based on the MIH electric vehicle platform. The overall design is quite digital, and similar to the Volkswagen ID.3.
There's a full-width LED DRL band, with an illuminated logo in the middle. Below that is the headlamp module. The bottom air intake is a mesh structure, and its shape is similar to the internal shape of the lamp module; both with a gradient dot-matrix.

The rear of the car echoes the front, also with a full-width light band for the taillights and separate modules for other left and right light functions. These modules can also display specific patterns to achieve a 'dynamic display' function. For instance, if there is a pedestrian passing in front of the car, the rear modules will show their travel direction in order to—at least in somebody's idea of theory—alert drivers behind.

Foxconn—they build Apple iPhones—have set a very rapid pace in car manufacturing. From the release of their car manufacturing plan to the official launch of the first three models took only one year, and now the release of Model B took just one more year. Foxconn are set to launch their first pickup truck model at this year's Hon Hai Technology Day today.

ESS: Tesla for Implementation of H.E.L.P. Technology

LIGHTING NEWS

Emergency Safety Solutions (ESS), creator of the Hazard Enhanced Location Protocol (H.E.L.P.) which brings vehicle hazard warning systems to help prevent crashes into disabled and vulnerable vehicles and their occupants, announced last week it has signed a global agreement with Tesla, to deploy H.E.L.P. on Tesla models initially in North America via over-the-air software update. This will be the first passenger vehicle implementation of H.E.L.P. technology and is expected to be added to a range of Tesla vehicles.

“This is great news for significantly increasing roadside safety,” said Tom Metzger, CEO of ESS. “Tesla is a leader in bringing first-time innovation to passenger vehicles and is leading the way by implementing H.E.L.P. technology on potentially millions of Tesla vehicles worldwide. It’s a monumental step in the effort to overcome the troubling safety issue of crashes into disabled and vulnerable vehicles, which tragically injure or kill tens of thousands around the world each year.”

ESS presented their car equipped with these features at the 2022 DVN workshop in Rochester. The car was at the entrance of the hotel and the attendees were able to see the hazard warning systems

ESS’ suite of H.E.L.P. solutions provide advanced lighting alerts and digital location-based alerts to greatly improve advance warning communications to drivers.

Hella: Two New Development locations in Romania

LIGHTING NEWS

Hella is further expanding its European R&D network in the electronics sector with two new development locations in the Romanian cities of Lași and Oradea. At the new locations, the development of future-oriented product technologies along key market trends such as automated driving and electromobility will be driven forward. Within the next three to four years, a total of up to 300 new jobs are to be created at the two locations.

“We decided to expand our network at the Oradea and Lași locations because they offer excellent conditions. As university cities and important economic centres in the north of the country, they have a large potential of highly qualified specialists, which is particularly important for us as a technology-strong automotive supplier,” says Gelu Murariu, General Manager of Hella Romania.

Hella has been present in Romania for over 17 years and currently employs around 4,500 people there. In addition to a regional administration centre, Hella also has three production facilities and three further development locations in Romania.

Driver Assistance News

Pony, Robosense in AD Tech Promo Pact

DRIVER ASSISTANCE NEWS

Pony.ai and RoboSense will carry out in-depth cooperation in the field of autonomous driving and intelligent transportation, and promote the landing and large-scale application of autonomous driving technology solutions.

At the beginning of this year, Pony unveiled their sixth-generation autonomous driving software and hardware system external design, sensor and computing platform solution for mass-production L^4 vehicles. RoboSense have leading vehicle regulation experience and lidar mass production strength. Their second-generation intelligent solid-state RS-LiDAR-M1 is designed for mass production with high integration and extremely streamlined structure and has passed a series of vehicle regulations tests in the world, with high reliability.

According to this strategic cooperation agreement, based on the Robosense M1 platform, the two companies will jointly develop lidar products for customized scenarios and accelerate their mass production processes.

Zvision-Nvidia JV for Solid-State Lidar

DRIVER ASSISTANCE NEWS

Zvision have officially joined the Nvidia Jetson ecosystem, and become a close lidar sensor partner of the Nvidia Jetson platform.

With the help of the Jetson hardware platform, Zvision's lidar products can greatly shorten the prototype test time and research and development cycle, improve efficiency, and meet the fast-paced development needs of the sensor industry, thereby accelerating the commercialization and safety of lidar systems.

Eventually, Zvision will work with Nvidia to create customised lidar sensing solutions; promote the safe landing of vehicle-road collaborations; low-speed unmanned intelligent logistics; high-speed trunk logistics; robotaxis; robots, and other autonomous driving multi-scenario applications, and empower the construction of infrastructure for autonomous driving.

From the start, Zvision have cultivated in the field of front-loading long- and short-range blindness products, and have been iteratively innovating to create a lightweight solid-state MEMS lidar with high reliability and resolution and low cost as the goals. Their lidar products have been commercialised in a number of autonomous driving application scenarios including terminal distribution; high-speed autonomous logistics trucks, and robotaxis. The partners cover autonomous driving technology companies; logistics companies, and car companies including Jingdong Logistics; Inceptio; Deeproute, and more.

General News

Hyundai Pour Money Into Software-Defined Vehicles

GENERAL NEWS

Hyundai say they will invest over USD $12bn through 2030 into developing software in a move to speed product development and boost revenue, including the creation of a new operating system for over-the-air updates in all Hyundai; Kia, and Genesis vehicles by 2025. The initiative will bring on a wave of 'software-defined vehicles' with fast technology that will bolster cars' resale value, according to the massive Korean **chaebol**. They plan to establish a global software centre and launch an L^3 autonomous driving system and two new EV platforms from 2025.

With this move, Hyundai are joining the likes of VW; Toyota, and GM in creating new operating systems that will run the software-centred cars of tomorrow. By developing software in conjunction with hardware, Hyundai are pledging to "significantly reduce the time required for all mass-production processes, including planning, design and manufacturing".