

Tue, 3 May 2022  
Weekly Newsletter

  
Lighting & ADAS

NEWSLETTER #749

## PixCell LED

Ultimate precision in perfect alignment

100+ individual cells with just 25  $\mu\text{m}$  spacing, perfectly matrixed onto a single LED chip for intelligent headlamps

SAMSUNG



# Editorial

## Our Automotive Field Is Changing

At ISAL last month, former Audi lighting chief Wolfgang Huhn gave a terrific keynote describing his vision on lighting, and explaining how the market and the technologies are changing. Among the instances he cited: Faurecia bought Hella; Calsonic Kansei and then Motherson bought Marelli; LG bought ZKW; Magna bought Olsa; Plastic Omnium bought AMSL and “now they've just bought Varroc Lighting” (see details below), and it will continue.

Light source suppliers are innovating like never before; electronics, semiconductor, and software suppliers are more and more active; and tier-2 suppliers are likewise on an innovation fast track in lenses; microoptics; DMDs; sensors and actuators; measuring equipment; materials; and engineering, simulation, and calculation tools and techniques—all of which in turn pave the way for yet more and faster innovation.

In this week's DVNewsletter you'll find our interview with Sunny Automotive, a great example of what Huhn was talking about. Sunny began mass production of automotive sensing lenses in 2006, and since 2015 they've successively entered emerging fields such as HUDs and lidar, cooperating with tier-1s around the world to equip cars from makers including BMW, Mercedes-Benz, Audi, and Ford. There is an interesting story showing how companies are evolving to innovate not only their products and services, but also their business models and methods. It's really exciting to see new companies coming onstream, old companies adapting and morphing as the automotive field as a whole becomes something unlike ever before.

Sincerely yours

  
DVN CEO

# In Depth Lighting Technology

## DVN Interview: Sunny Automotive



Sunny Optical Technology Group, established in 1984, are a comprehensive manufacturer of optical components and products. Sunny Automotive, a core subsidiary, came onstream in 2004 to focus on R&D, production, and manufacturing of automotive optical products. Their first automotive sensing lens entered mass production in 2006. From 2012 up to now, their market share has been N° 1 in the world in their field; that's 10 consecutive years. Sunny Automotive have cooperated with world-renowned tier-1 suppliers, and Sunny lenses equip cars from the world's major makers including BMW, Mercedes-Benz, Audi, and Ford. Since 2015, Sunny have successively entered emerging fields such as HUDs, lidar, and smart vehicle lights.

Tani Gu is Sunny Automotive's deputy general manager. She has been deeply involved in the automotive field for more than ten years; has a profound automotive optics and industry background; and has extensive practical experience in strategic planning; market development; customer relations, and product management. She graciously honored DVN with an interview:



## **DVN: Sunny's original business was automotive lenses. What drove you to enter the automotive lamps market?**

**Tani Gu:** As for automotive lamps, the traditional cognition is only for lighting, to illuminating the dark. However, with the development of intelligent driving, it is a trend to realize information interaction via car itself, and the market and industry have also put forward much more demands for this function. Lamps are good medium for information interaction, except the original lighting function, it need to realize information interaction, in other words, the automotive lamps must equip with projection function. Since the projection function is involved, it is not the traditional lighting optics category, but the imaging optics. Since its establishment, Sunny Automotive has been focusing on the field of imaging optics, which is our biggest strength, so we began to enter the automotive lamps market in 2017.

## **DVN: From an optical point of view, how do you see the future development path of car lamps?**

**TG:** Automotive lamps are developing from lighting optics to imaging optics, but because of imaging, they have pixel requirements, such as 100-level pixels, 1,000-level pixels, 10,000-level pixels, and megapixels. As the pixels of the lights become higher and higher, the information interaction content it can carry will also be richer. Simple applications, such as the ADB (Adaptive Driving Beam) function, can realize adaptive switching of high and low beams by partitioning and controlling lights to avoid dazzling other road users. Now, some premium cars begin to cast more complicated content, such as crosswalks, light track navigation, welcome patterns, etc. In general, automotive lamps will gradually develop from lighting optics to imaging optics in the future, and there will be a trend of continuous development to high pixelation, and the content of imaging will become more and more diverse.

## **DVN: What are the advantages and challenges with Sunny's lamps?**

**TG:** Sunny has been focusing on imaging optics, it has accumulated profound experience in imaging optics. In terms of lens design, good thermal compensation characteristics can ensure stable imaging under high and low temperature, and the special lens processing technology can effectively solve the problem of sunlight flooding and color edge. Sunny has been rooted in the automotive industry for many years and has a relatively deep understanding of car regulations. It can well apply the imaging optics and automotive grade regulations experience on the automotive lens to the automotive lamps.

However, automotive lamps and automotive lens are also very different. Automotive lamps must realize both lighting and projection. The core parameters (such as brightness, illuminance, contrast, projection distance, lighting range, etc.) are different from automotive lens. The requirements are also more stringent, so it is more complicated situation when we design the imaging lens for automotive lamp.

## **DVN: With the pandemic and chip shortages in mind, what are your views and insights on future development?**

**TG:** I think it is an opportunity from a general perspective. We can see that intelligent development in the future is an inevitable trend. Now due to the epidemic and lack of chips, the market development has slowed down compared with the previous years.

But from another point of view, because of the current shortage of resources, everyone is more focused, concentrated on solving the main contradiction, and more prudent in

the layout and planning of the company's future development. Therefore, we can see that many new car manufacturers in China have made great efforts in recent years. They continue to break through and innovate, which is an excellent opportunity for them. If they seize it, it can even allow Chinese manufacturers to succeed in overtaking in automotive field and enhance their brand awareness in the global market.

**DVN: On that current background, then, what opportunities or challenges do you see for Sunny Automotive?**

**Tani:** Intelligent vehicles and autonomous driving are inevitable development trends. Sunny has been committed to provide optical solutions for autonomous and intelligent driving. In addition to the imaging lamp products with interactive functions, such as automotive headlamp, ground projection lamps, cabin projection lamps, and products with sensing functions, such as sensing lenses, have huge market potential, and we are very optimistic about the sensing market. As constantly upgrade of autonomous driving levels and the need for safety redundancy, the demand for lidar will keep rise up. In recent years, Sunny has continued to increase the layout of the lidar field. From this year, a variety of products for lidar applications will be put into mass production; at the same time, with the development of smart cockpit, the HUD market is emerging, and there will be more abundant applications in the future. At present, many of our products for HUD applications have achieved mass production.

However, with the rapid development of "automobile + optics" market, we will face more and more competitors and also bigger challenge. But Sunny always insists on providing customers with satisfactory products and services, continuously improving the company's competitiveness, and actively responding to all the challenges.

**DVN: What Sunny innovations can we look forward to seeing at the 25<sup>th</sup> DVN Workshop in Shanghai this September?**

**TG:** Sunny Automotive has successfully developed array projector lamp, with exclusive IP, which can achieve miniaturization; high definition, and more flexible imaging content. It can not only cast information interactive content, such as welcome patterns, but also project warning content, such as reversing warning signs, to meet the needs of personalized projection. At the same time, the mounting position is flexible and can be installed anywhere on the vehicle body. And depends on customer needs, to provide overall vehicle projection solutions, Sunny welcome industry personnel to exchange and discuss at any time at [sunnyoptical.com](http://sunnyoptical.com).

# Lighting News

## Plastic Omnium to Buy Varroc Lighting

LIGHTING NEWS



Varroc Engineering have agreed to sell their more-than-three-wheeled-vehicle lighting business to French supplier Plastic Omnium for €600m. The impetus behind the sale: Varroc want to reduce debt while focusing on their electronics, connectivity, and EV product ranges in the high-growth Chinese and Indian markets and on the 2-wheeler segment globally.

Varroc will divest their 12 lighting system operations in the USA; Brazil; Mexico; Poland; Czechia; Germany; Turkey, and Morocco. But they're keeping their 4+-wheeler lighting operations in Asia and will continue to operate their Chinese JV and other international 2-wheeler businesses in countries like Italy and Vietnam, and global electronics businesses in Poland and Romania. The company is retaining its 4-wheeler lighting operations in Asia.

Varroc Lighting Systems, the sixth-largest vehicle lighting maker globally, with a 5.6% share (in 2020) of the market to supply headlamps, auxiliary lamps, and signal lamps for the world's automakers such as Ford, Jaguar Land Rover, GM, and Volkswagen.

Laurent Favre, Chief Executive Officer of Plastic Omnium said: “Varroc Lighting Systems is a strategic addition to our business that will provide us with an extensive lighting product portfolio, a balanced footprint across best-cost countries and cross-selling opportunities. Building on our operational excellence, financial strength, and

long-term vision we have identified clear levers to bring VLS to best-in-class operating performance.”

***Plastic Omnium***, for 75 years has supported the transformations of the automotive industry. It designs and produces complex and interactive body systems, emissions reduction systems and energy storage solutions. With revenue of €8b in 2021, a network of 137 production sites and 31 R&D centres that are located near its clients, Plastic Omnium's 30,000 employees committed to rising to the challenges of zero-carbon mobility.

Their acquisition of the Varroc lighting business will complement their existing activities so they can offer more content per vehicle to their automaker customers—the largest of whom are VW Group, Stellantis, Daimler, and BMW.

# Forvia CEO on Why They Bought HELLA

## LIGHTING NEWS



Faurecia has just completed the acquisition of HELLA. The new group, renamed Forvia, becomes the world's 7th equipment supplier and announces a turnover expected to reach €33bn in 2025. Faurecia has also just gained its independence, via a spin-off, from its historic shareholder Stellantis.

In an automotive industry in full transformation with major developments such as the transition to electric and connected or autonomous vehicles, the company is working hard on Hydrogen with its joint venture Symbio or its recent partnership with Air Liquide.

After the purchase of Clarion, HELLA will allow the Group to change dimension in terms of electronic and software skills.

DVN was invited to attend a lecture of CEO Patrick Koller about his strategy.

Here's a quick summary:

### **On Faurecia's acquisition of HELLA:**

Hella represents a great complementarity with Faurecia activities with

- their expertise in electronics and geographic footprint;
- the great future of lighting which is a wonderful product range,
- their B2C activity in diagnostics, here again with an expectation of great growth.

### **On Uncertainly and change:**

We're in a time of great change from planned word to event-driven actions, through sustainability/climate change. Covid outbreaks and lockdowns in China; Russia's war on Ukraine, and the semiconductor shortage mean we're in an inflationary period for a while. These and the social tension and unrest all over the world also mean short-term consequences which will reduce vehicle volume this year.

Meanwhile, there's fierce competition to recruit talent, mainly in electronics and software.

### **On Forvia's priorities:**

- Inflation and squeeze management
- Forvia synergies
- Inventories
- Portfolio management
- Anticipate 2023

# Star Tech's Mini, Micro LED Tester

LIGHTING NEWS



Mini- and microLEDs are becoming more popular and moving from ideas to production. They're bringing with them a near-zero tolerance for bad pixels and ultra-small pitch, which in turn call for highly capable electrical and optical measurement systems. Star Technologies' Unicorn-LAIT II system addresses these stricter testing requirements and with its unique parallel test architecture for electrical, driver functionality, RGB, optical testing capabilities.

Unicorn-LAIT II is an advanced, high-throughput LED test system for dies in the hundreds of thousands to millions of LEDs per wafer. High parallelization allows significant reductions in the time and cost to carry out all necessary tests; Unicorn provides critical measurements for and integrates parallel testing with the electrical, optical measurement with probe station and probe cards in one system, offering a comprehensive analysis result.

Based on Star's Unicorn-LPX precision SMUs with 48 to 480 channels, this new model provides fast, accurate optical characterization of each microLED. The probe station, with high-precision closed-loop XYZ stages with 0.1 $\mu$ m laser encoder feedback, ensures perfect repeatability in multi-LED stepping at <math><5\mu\text{m}</math> pad size.

With Star's microLED-MD test probe card, the Unicorn enables widely various probe layout configurations for accurate multi-DUT probing and ensures current contact height with multi-edge sensing capabilities, and users can easily and efficiently set up and control the whole measurement process with upgradeable software.

# Forvia to Review Biz Activities Under €1bn

## LIGHTING NEWS



海拉新任首席执行官 MICHEL FAVRE

Faurecia will review all their business activities under €1bn, as the supplier ramp up their divestment plan following their acquisition of Hella.

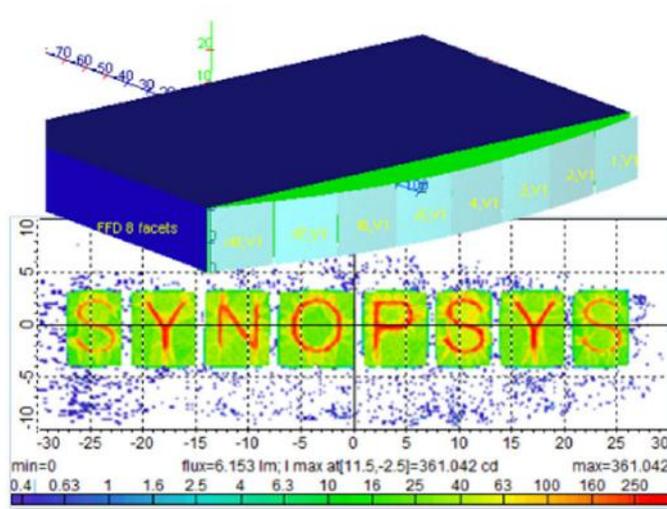
Faurecia finance chief and new Hella CEO Michel Favre says: "We are building a very powerful group, so we need to focus on the key business". Favre also said the group's clean-mobility business will not be sold off.

Faurecia say they bought 81.5% of Hella for a total of €5.4bn and stopped buying shares at the end of February. Based on 2020 sales at Faurecia and Hella, aggregate sales of around €22bn would have ranked the combined company N° 8 on the list of the automotive suppliers—just behind Hyundai Mobis.

Favre and CEO Patrick Koller have issued annual targets on the low end of forecasts, citing caution linked to Chinese lockdowns and Russia's war on Ukraine: the combined group should generate sales of about €23bn to €24bn this year with a profit margin of four to five per cent—guidance based on conservative estimates on worldwide automotive production, which have fallen due to global supply disruptions linked to the war on Ukraine and new Covid lockdowns in China. In a call with journalists, Favre said "Components are not the problem; the problem is knowing what the final demand will be, and the situation in China, which is both a production and a demand problem".

# There's a New LucidShape In Town!

## LIGHTING NEWS



The latest release of LucidShape, version 2022.03, provides many new features and enhancements to help designers shift their vehicle lighting work into top gear. Designers can work smarter and faster with the new Advanced Analysis Tool and develop cutting-edge lighting with MacroFocal enhancements for freeform lenses and reflectors. Additional updates included in this release help simplify product development workflows to accelerate time to market.

The LucidShape Advanced Analysis tool streamlines analysis steps, provides access to a wide range of new analysis tools, and simplifies interactive design analysis and troubleshooting. With Advanced Analysis, it's easier than ever to interactively analyze a light distribution to see if it meets requirements by performing measurements on points; splines, and polygons; and analyze multiple lamps at one time by combining multiple UV Data files and taking measurements on the results.

LucidShape's MacroFocal feature for the design of multifaceted reflectors includes state-of-the-art freeform design capabilities to provide more granular control over light spread to maximize flux collection. This gives designers the freedom to focus on styling and appearance, rather than the implementation details of complex optical components.

Low beams, fog lamps, and today's more complicated composite beams for ADB have light/dark cutoffs involved. When physically testing such lamps for regulatory compliance, an aiming procedure must be carried out prior to conducting the photometry test. When photometrically testing simulation results generated with LucidShape, now there's an automatic vertical aiming option: specify the horizontal position and desired cutoff height, and the aim adjustment is carried out automatically. This can save a lot of time during virtual prototyping and testing.

# Changing Roles at Koito

LIGHTING NEWS

The Koito logo is rendered in a bold, red, stylized font. The letters are thick and rounded, with a distinctive horizontal bar connecting the top of the 'i' and 't' characters. The 'o' characters have a small white dot in the center.

Koito have announced changes of directors and corporate officers decided by the Board of Directors on 27 April:

- Masahiro Otake is Chairman and CEO;
- Michiaki Kato is President and COO;
- Kenji Arima is Engineering Executive VP.
  
- Takayuki Katsuda; Atsushi Inoue, and Toshiyuki Katsumata are Managing Corporate Officers;
- Koji Shimakura; Kirk Gadberry, and Manabu Kobayashi are Corporate Officers—the latter two at NAL (North American Lighting), Koito's U.S.-based subsidiary.

# Driver Assistance News

## BMW 7 Has Innoviz Lidar

### DRIVER ASSISTANCE NEWS



Israeli lidar supplier Innoviz, having worked cooperatively with BMW for four years, now are supplying lidar sensors for the new BMW 7-Series, slated to go on sale this coming November.

BMW are calling the Innoviz item the most powerful sensor in the industry—which befits the new 7er, configured and marketed as the technology leader in safety and driver assistance capabilities. Innoviz's sensor is a key component in the array of sensors that support these applications, along with multiple radars and an 8-megapixel camera.

The EV i7 model includes  $L^2$  auxiliary applications (i.e., with hands on the steering wheel) of adaptive cruising and lane keeping. At speeds of up to  $140 \text{ km/h}$ , a mode of automatic driving can be activated on intercity roads: the car performs the acceleration, braking, and steering operations autonomously, without the driver being required to grip the steering wheel, but only to keep their gaze on the road. The system can even transition from path to path autonomously. As the car approaches the exit from the main road, the driver can instruct at the push of a button to automatically make a gradual, lane-to-lane exit transition—as long as the traffic is not too busy or the exit too close.

BMW have announced that sometime after SOP, new 7-Series cars will allow  $L^3$  autonomous driving at up to  $60 \text{ km/h}$  even on non-intercity roads—and for this, the Innoviz lidar sensor is essential.

# Nissan Demo Lidar System

## DRIVER ASSISTANCE NEWS



Nissan are demonstrating a new lidar system, set for launch the middle of this decade, which they say will let vehicles conduct high-speed emergency maneuvers without a human driver's help or intervention. A Nissan Skyline sedan equipped with the system dodged errant vehicles; rolling tires, and road debris, and stopped for mannequins darting into the road—all by itself, and while cruising at up to 100  $\text{km/h}$ .

The system also has a lidar function that enables the car to self-navigate in areas where there are no clearly-defined maps or road markings. This uses something called Dynamic SLAM, short for Simultaneous Localization And Mapping. Tetsuya Iijima, the general manager in charge of driver-assist technologies at Nissan, says the system is uniquely capable of such high-speed, super-agile autonomy, and that other systems cover only routine driving under predictable conditions. The technology, Iijima says, is key to achieving "secure autonomous driving" that can safely stop a car in any emergent situation.

The lidar system, being developed with Luminar Technologies, increases the vertical field of view to above  $25^\circ$ , from around  $10^\circ$  in today's lidar. It increases the detection range to 300 m ahead of the vehicle, compared with around 100 to 150 m in current systems. And it delivers higher resolutions, to a level as detailed as  $0.05^\circ$ ; twice as fine as today's  $0.1^\circ$ . Cost is a hurdle; today a single lidar sensor can cost \$1,000. For realistic mainstream deployment, Iijima says that cost must drop below \$300. Nevertheless, Nissan feel lidar is practically mandatory—like virtually everybody whose opinion matters, excepting Tesla CEO Elon Musk, who scorns it. Iijima says: "Secure and safe autonomous driving must have this technology" as Nissan work toward a commercially sound  $L^3$  capability; "we want to perfect these emergency maneuvers first".

# Show-And-Tell With Valeo Lidar CTO Clément Nouvel

## DRIVER ASSISTANCE NEWS



Clément Nouvel, Valeo's lidar CTO, says his company are "very well positioned in the mobility market of tomorrow. with an acceleration of developments on an essential product for driving assistance, the lidar which makes it possible to measure distances and detect obstacles by laser beam. It is a sensor with extraordinary performance that makes possible a very advanced degree of vehicle autonomy. Today, we are already the world N° 1 in these technologies. We make ultrasonic sensors, cameras, and then this newcomer, lidar."

In an [online video](#), Nouvel explains how Valeo's second-generation lidar plays an important role in the Mercedes-Benz Drive Pilot system for  $L^3$  automated driving, allowing the driver to delegate—under certain conditions—the driving task to the car in complete safety.

The new Mercedes S-Class is the first car in the world to be equipped with this Valeo technology. Valeo put it through test drives in Los Angeles' notorious traffic. Nouvel: "I could experience Mercedes-Benz Drive Pilot level-3 operation in real traffic conditions, which is very impressive and incredibly fluid even in very complex situations, thanks to the S-Class' cutting-edge sensor set and proprietary vehicle control. On many levels, this  $L^3$  is much more than any  $L^2$  in operation today. The lidar brings not only a 3<sup>rd</sup> redundancy sensor on top of camera and radars, but also an unprecedented level of perception—in all light conditions—of the environment around the vehicle".

# WeRide & Hesai to Promote 1st App of semi-solid lidar in L4

## DRIVER ASSISTANCE NEWS



Hesai Technology, the world's leading lidar company, and WeRide, the world's leading L4 autonomous driving technology company, announced a cooperation upgrade to promote the first application of automotive-grade semi-solid lidar in autonomous vehicles, supporting the large-scale deployment and commercial application of WeRide's autonomous driving technology.



SELF-DRIVING TAXIS EQUIPPED WITH WERIDE



WERIDE ZHIXING DRIVERLESS MINIBUS

As early as 2019, the Hesai Pandar series began to be deployed in batches in WeRide's Robotaxi fleet with over 100 units for testing and operation, supporting WeRide to successfully land China's first fully open and commercialized Robotaxi.

Till January 2022, WeRide has accumulated more than 10 million kilometers of autonomous driving mileage on public roads, with a fleet of more than 300 vehicles, consisting of different models such as Robotaxi, Robobus, Robovan, and Robosweeper. WeRide's self-driving fleet is deployed at home and abroad, including many cities in China, San Francisco.

Hesai AT128 automotive-grade semi-solid lidar adopts its unique chip technology and integrates 128 lasers internally, achieving a global resolution of up to 1200x128 and a distance measurement capability of 200m (10% reflectivity). The effective details of more objects in the field of view provide powerful perception capabilities for high-level autonomous driving, further accelerating the iteration of autonomous driving algorithms. At the same time, AT128's highly integrated transceiver module and low-speed and stable scanning structure make this product one of the most comprehensive vehicle-grade semi-solid-state lidars on the market. AT128 is expected to be fully mass-produced and delivered in the second half of this year in Hesai's planned "Maxwell" intelligent manufacturing center with an annual production capacity of one million.

# Pony.ai to launch "unmanned" Robotaxi in Beijing

## DRIVER ASSISTANCE NEWS



Pony.ai announced that the company took the lead in obtaining the first batch of "unmanned demonstration application road tests" notices in the Beijing Intelligent Connected Vehicle Policy Pioneer Zone, and was approved to provide the public with "no safety officer in the main driver's seat, with a safety officer in the co-pilot seat".

It is reported that the implementation details of this demonstration application management have introduced more comprehensive and detailed test requirements for the unmanned test of autonomous driving in Beijing, and made a breakthrough to expand the test range from the original 20 square kilometers to 60 square kilometers of complex urban road scenes.

After obtaining the license, it can carry out unmanned Robotaxi in the core area of 60km<sup>2</sup> in Yizhuang Economic and Technological Development Zone, Beijing, which means that Beijing citizens will have the opportunity to use the existing Pony Pilot+App to call a robot. Taiwanese owners drive unmanned autonomous vehicles to multiple subway station entrances in Yizhuang, public facilities such as parks and sports centers, as well as key business districts and residential quarters.

According to reports, when the main driver of an autonomous vehicle without a safety officer randomly accepts an order, passengers can receive an exclusive reminder through the mobile app. During the driving process, passengers can remotely contact customer service through the App to deal with possible unexpected problems and needs.

As of April 2022, Pony.ai has completed a total of 200,000km of autonomous driving unmanned test mileage across the country.

# General News

## Valeo's 1Q-22 Sales Results: Sturdy During Rocky Times

### GENERAL NEWS



The Valeo Group's consolidated sales came to €4.75bn in the first quarter of 2022, stable compared to the same period in 2021. Business was affected by supply difficulties for electronic components as well as Russia's invasion of Ukraine and the Covid lockdowns in China, which have disrupted supply chains and automakers' production schedules.

The Visibility business group underperformed global automotive production by 3 percentage points, on account of disruptions in production on certain vehicle platforms, and by an unfavorable product mix with lower electronics content—vulnerable to the semiconductor shortage.

The Comfort & Driving Assistance business group outperformed global automotive production by 6 percentage points, thanks to the launch of numerous ADAS projects, notably in North America and especially in China.

Based on the latest automotive production estimates, production of 80.6 million vehicles and current levels of raw material and energy prices, Valeo forecast for 2022 sales of €19.2bn to 20.0bn and EBITDA of between 11.8 and 12.3 per cent.

CEO Christophe Périllat says "Activity in the first quarter proved resilient, with an outperformance in all production regions, driven in particular by our activities in the areas of ADAS and the thermal management of electrified vehicles. Our aftermarket business posted double digit growth, buoyed by an attractive offering for customers as well as market momentum".

# ZF to invest €200 million in India

## GENERAL NEWS



ZF has committed over €200 million in India for the commercial vehicle division in the coming decade and it will be setting up a new manufacturing site in Orgaddam on the outskirts of Chennai. The company aims to regain its past peak to €400 million in revenues in 2022 for its commercial vehicle division in India and it has set itself an ambitious target to grow by two and half times to € 1 billion by the end of the decade in the country.

The Group has committed over €200 million in India for the commercial vehicle division in the coming decade and it will be setting up a new manufacturing site in Orgaddam on the outskirts of Chennai, which has been selected to be eligible for the Government of India's production linked incentive scheme.

Williem Rehm, Member of Board of Management and the global head of the Commercial Vehicle Solution Division at ZF told, India is a very important market and it employs 6500 people in India across all businesses. For the CV division alone, it has hired 300 software engineers who are doing a critical role on the future of mobility and the company is in the process of setting up a new plant to grow in this decade.

"We are investing heavily in India. There is a reason why India has been carved out as a separate region from Asia Pacific with a dedicated P&L to offer higher responsibility on the base," added Rehm. With a significant rise in global sourcing from India and strong bounce back in the domestic commercial vehicle market, India will continue to outpace and be amongst the fastest growing markets for ZF in the coming decade.