Continental
The Future in Motion

White Paper
Smart Tires

Digital solutions for efficient and sustainable logistics

Efficient and safe

Tires are Smart

Connected solutions will enable future mobility to adapt to tougher demands.

More and more goods are being transported on our roads and the number of distribution vehicles in our cities continues to rise. More and more people are commuting to work and using more distant shopping and leisure facilities. Tackling these trends in an environmentally friendly, cost-efficient way in the face of spiraling energy costs represents a real challenge. “Digitalization offers a great opportunity” according to a study from the Fraunhofer IESE on future mobility. Fleet managers are therefore becoming increasingly interested in connected solutions for their vehicle fleets. Manufacturer apps for producing status reports are considered highly useful and are already used by many. And no wonder, as they help to get the biggest cost drivers in the fleet under control.

Tires have an important role to play here. Integrated tire pressure monitoring systems (TPMS) improve fleet efficiency, enabling predictive maintenance, reducing costs, minimizing energy consumption and lowering emissions. TPMS systems also increase safety and comfort for drivers and optimize vehicle availability. This safety aspect means they are mandatory in many countries for passenger cars and light commercial vehicles. Corresponding EU regulations for trucks came into force in July 2022 for new vehicle homologations and will be extended to all newly registered vehicles from July 2024.

TPMS are important for new forms of mobility such as carpooling and car-sharing services, which are leading to a growing number of shared vehicles. Here, smart tires collect data that benefits drivers and owners alike.

In future, smart tires could even maintain themselves by adjusting tire pressure and tread to driving conditions.

In tune with customers' individual needs

Focusing on Core Business

Emphasis is shifting to individually adapted, results-driven solutions.

As part of its 'Vision 2030' strategic program, Continental is focusing on adopting a consistently customer-centric approach. One of the keys to achieving this is 'servitization', i.e. a growing range of services to complement the products. This allows the technology company to cater to the various customer segments even more effectively.

The objective is an entire ecosystem of comprehensive tire services designed to enhance customer benefit. Continental has already successfully demonstrated in pilot projects the added value to be gained from smart, digital tire solutions that give a major boost to safety and productivity at the same time as lowering costs.

In the process, the product itself almost fades into the background, with availability and intensity of customer use coming to the fore instead. In its capacity as a complete solution provider, Continental seeks to deliver results and thereby ensure immense customer satisfaction.

The ContiConnect™ system enables fleet managers to keep an eye on every tire and carry out specific checks on them. This type of service will become increasingly important in future as fleets are going to increase in number and size. Services are therefore being developed to ease the tire-related workload, allowing fleets to focus on their core business.

In so doing, Continental is meeting its customers' need for individually adapted solutions. The product development team strives to make increasingly nuanced data available and keep enhancing the range of fleet services on offer. This involves always asking the same questions: what task does the customer perform? What are the relevant key figures? What are the products and solutions that Continental can offer?

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System Offering Added Value

The ContiConnect™ digital tire management system offers haulage and fleet companies a modular product that can be individually tailored to their specific needs. The system seeks to maximize a fleet's cost effectiveness in order to successfully withstand cost pressures, while also driving fleet digitalization and connectivity as well as predictive maintenance.

One solution for a range of use cases: the components of the intelligent tire management solution provide real-time tire data and reinforce the four key pillars of fleet efficiency

→ Page 6

"Artificial intelligence and data connectivity will be of crucial importance for **cost effectiveness** in the field of transport logistics."

Bernd Klotz, Managing Director of haulage company Spedition Klotz

→ Page 11

"With ContiConnect 2.0 we are taking the next step towards **predictive maintenance**."

Paul Broker, Fleet Engineering Director at G.Webb Haulage

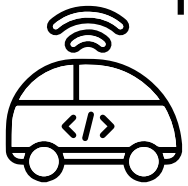
→ Page 19

"A digitalized fleet enables you to plan ahead when it comes to maintenance and servicing and that makes it an effective tool for cutting CO_2 emissions and looking after resources, while also increasing

operational safety and **sustainability**."

Gerhard Pomberg, Remondis Soest

→ Page 24



"Our collaboration is rooted in an innovative concept that points the way forward to sustainable mobility in the future – to **new forms of mobility**."

Steen Herløv Andersen, Operational Manager SHARE NOW Denmark

“Data transparency is a crucial factor in the successful implementation of efficient fleet management.”

ANNIKA LORENZ, HEAD OF FLEET SOLUTIONS AT CONTINENTAL TIRES GERMANY

Cost Effectiveness

“Artificial intelligence and data connectivity will be of crucial importance for cost effectiveness in the field of transport logistics. In our sector, reliable delivery on schedule, friendly drivers and modern vehicles are just as essential as the right price-performance ratio. So we’re always looking to keep our costs as low as possible. I’m absolutely certain that the only way to further reduce costs in the logistics industry is to keep improving efficiency. To achieve this, we rely on the Conti Hybrid range of tires with their optimized mileage and rolling resistance and retreaded ContiRe tires, as well as digital solutions, also from Continental. We were among the first businesses in Germany to install the ContiConnect tire pressure monitoring system in 2015. And as a test customer for the upgraded Conti Connect 2.0, we were the first to equip vehicles with second-generation sensors.”

Bernd Klotz, Managing Director of haulage company Spedition Klotz

Haulage company Spedition Klotz
Freiburg (Germany)
50 vehicles
Goods carried: sanitary ware, heating appliances, food

Click here to see the video

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TPMS Mandatory for all Vehicles

Since July 2022, this standard requirement that has proven its worth over many years in the passenger car sector also affects commercial vehicle workshops and fleet operators.

According to the European Union's General Safety Regulation that came into force in July 2022, heavy commercial vehicles such as buses or trucks and their trailers must be gradually equipped with TPMS (tire pressure monitoring system) sensors. This initially applies to all new vehicle types (new homologations), before being extended to all new commercial vehicles that leave the factory from 2024. In early 2022, Continental already added TPMS Update Plus Transport to its commercial vehicle service portfolio to enable tire pressure monitoring and maintenance of tire pressure monitoring systems on both tractor units and semitrailers.

"The transportation industry is facing many changes in the coming years," explains Filip Kevilj, Product Manager for Diagnostics and Service Devices at Continental. "As a partner with a great deal of experience with both tires and service devices, Continental is keen to give workshops every help it can during this transformation."

Convenient and always up-to-date

The TPMS Pro testing and programming device enables commercial vehicle workshops to perform customized tire servicing for commercial vehicles safely and easily. However, the TPMS Update Plus Transport database extension can do more than simply activate and test TPMS sensors. "The service device can store and manage up to twenty six wheels per commercial vehicle as well as allowing flexible axle and tire configurations, even with twin tires," adds Filip Kevilj. Thanks to radio frequency (RF) technology, all the sensor data for twin tires can be obtained in one quick step.

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“Given the tire pressure situation as it was, plus the high fuel consumption we were seeing and the relatively low mileage of the tires, I set out to find a system that was easy to operate and check, and which helped me to keep my fleet of vehicles on the move. With ContiConnect on our 120 trailers the number of on-the-road punctures each year has been cut by two thirds and our service to customers has therefore improved significantly. The lifespan of the tires has been extended by 20 percent and maintaining the correct tire pressures has brought down fuel consumption by an average of 0.5 liters per 100 kilometers. We are very happy with the system. The promised levels of performance have been achieved and we have been able to reduce our fleet costs substantially. And we already achieved a return on our investment in the second year of use. This is a win-win investment as far as I’m concerned.”

Peter Eggers, Managing Director of haulage company Eggers Spedition GmbH

Haulage company Spedition Eggers
Hildesheim (Germany)
80 vehicles, 120 trailers
Goods carried: food and animal feed

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More Efficient Fleets

Five questions for Dr. Christian Lerner, Vice President Connected Tire – Technologies & Analytics at Continental.

What is tire management all about?
Using sensor technology and data transmission, we integrate the tire into the overall vehicle network so as to allow fleet operators to make the right decision at the right time. So, when to replace a tire, for instance, and combine that with other upcoming vehicle maintenance work. We provide the relevant information and an overview of the fleet's general status in the form of any necessary alerts and graphical summaries.

And why does this matter so much?
Tires are consumables and generate considerable costs. Mileage and lifespan have a major economic impact. Rolling resistance affects fuel consumption, while worn tires are more susceptible to tread punctures, resulting in breakdowns and downtimes. Checking tires, however, requires a lot of personnel resources. Tire management systems such as Conti360° Solutions are able to take over this entire task, allowing fleets to focus on their core business.

How is the data recorded?
Using sensors on the vehicle or inside the actual tire. While tire-mounted systems are costlier, they have increased capabilities and are more accurate. A wealth of reliable data is needed for optimum tire management, so we combine the two solutions. Besides this, more and more data is available about the tire itself thanks to e.g. QR codes on the sidewall or RFID chips inside the tire.

What is all this data needed for?
We use it as a basis for developing services that increase fleets' efficiency. Brand new business models are quite conceivable here: for example, instead of selling tires, a fee could be charged for using them when the truck is actually on the road. But that would only work once we are able to reliably delineate many different influencing factors.

What is Continental conducting research into for the future?
Load fluctuations, uneven wear and individually specified tire pressures are all intriguing topics. We are expecting further progress to be made here with regard to optimizing tire usage and minimizing environmental impact.

Click here to listen to the "Smart Tires" podcast to the "Smart Tires" podcast (in german language)

“Monitoring and predictive maintenance are set to play an important role in the transport industry in future.”

SVEN WILHELMSEN, HEAD OF PRODUCT MANAGEMENT DIGITAL SOLUTIONS AT CONTINENTAL TIRES GERMANY

Predictive Maintenance

> We've been a fan of the ContiConnect platform from the outset and use it as part of the Conti360° service package. ContiConnect has enabled us to keep tabs on the current tire status of our trucks. It helps us to minimize fleet costs by giving us the information we need to stop a truck with a tire defect quickly and reliably before it escalates into a blowout or a breakdown. ContiConnect has helped us to reduce the number of punctures and significantly improve work planning in the workshops. With ContiConnect 2.0 and the multifunctional app offering fleet managers even greater operational flexibility, we are taking the next step towards predictive maintenance."

Paul Broker, Fleet Engineering Director at G.Webb Haulage, Cambridge, UK

G.Webb Haulage
Cambridgeshire (UK)
55 vehicles
Goods carried: aggregates, stone, concrete, soils, coal, fertilizers, scrap metal

Click here to see the video

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On an upward trend

The Big World of Tiny Sensors

It's difficult to imagine cars and trucks without sensors now, and they could soon be finding their way into vans too.

From turning assistant and collision warning features to airbags and tire pressure monitoring systems, sensors now form a crucial part of the equipment fitted in vehicles today. Previously, sensors were mostly used for the powertrain and chassis. Over recent years, the range of applications for these miniature devices has expanded rapidly in line with the growing need for safety and comfort. And this trend is set to continue in view of the increasing number of assistance systems and the advent of automated driving.

In-house sensor technology expertise
Continental has amassed decades of experience in the development and manufacture of sensor technology. A vast number of software engineers apply their know-how to keep increasing sensor performance and precision.

Direct and indirect sensors
Tire pressure monitoring systems (TPMS) work using either indirect or direct tire sensors. Direct TPMS systems use pressure and temperature sensors that are fitted in each individual tire and are in direct contact with the air inside the tire. They measure physical parameters in real time and relay them to the control unit in the vehicle or the Continental cloud. Pressure is measured with a resolution of 0.1 bar or even less. This enables the tire sensors to detect small variations in pressure or temperature very quickly, indicate a value deviation and trigger an alarm. The sensors are either connected directly to the inner side of the tire or positioned on the wheel rim near the valve and attached to it. The sensors are powered by batteries, so they typically keep working for the duration of a tire's service life and beyond.

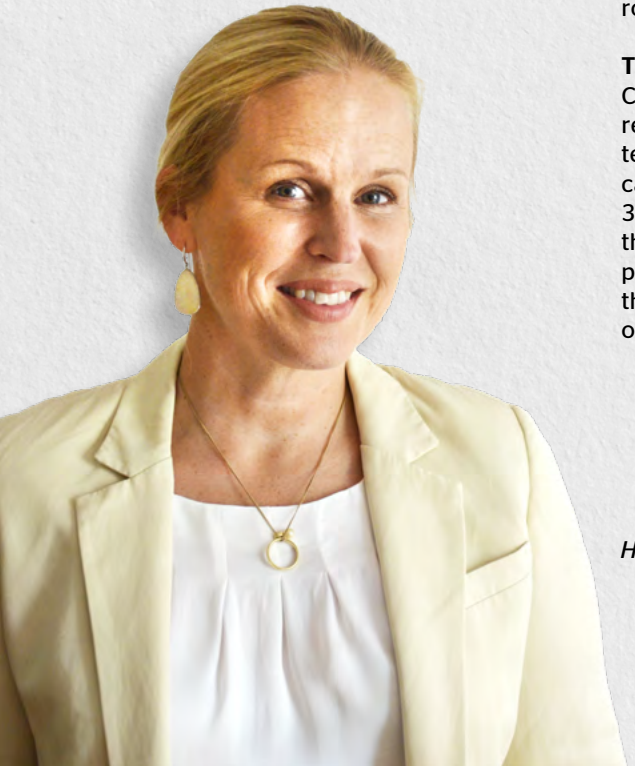
Indirect TPMS sensors, on the other hand, work by registering changes to the wheels: if tire pressure is too high or too low, the tire's properties while rotating will also change. For example, there might be an increase in rotational speed due to the tire's rolling radius decreasing as its internal pressure drops. The vibration behavior of the tire casing likewise changes as a function of tire pressure. The vehicle electronics use the speed sensors on the four wheels to detect these changes and notify the driver that there must have been a change in tire pressure.

From an overall point of view, direct TPMS systems offer greater potential as the pressure and temperature data they provide paves the way for active tire management. For this reason, Continental favors the use of direct TPMS sensors.

Using Real-time Data as a Basis

Digital solutions are key to the digital tire management of tomorrow.

With ContiConnect Live and its integration into OEM systems we are making further advances in the field of digital tire management. The ContiConnect Driver App enables fleet managers to integrate digital tire monitoring into the existing vehicle hardware via the open-platform Mercedes-Benz Truck App Portal – all from their office and while the truck is on the road.



Annika Lorenz,
Head of Fleet Business Germany,
Continental

Tire parameters in real time
ContiConnect simultaneously relays the real-time data from the tire sensors to the telematics system display in the driver's cab, to the fleet manager, as well as to the 360° Solutions backend. This makes sure that all essential tire parameters are supplied to our customers in real time so that they can take immediate action in the event of anomalies or other problems.

Transparency and efficiency
This data transparency is a crucial factor in the successful implementation of efficient fleet management. Optimized fuel consumption, fewer punctures and a long tire service life are all of key importance for our customers.

Intelligent fleet connectivity
Integrating the ContiConnect Driver App into the Mercedes-Benz Truck App Portal platform provides our customers with another tool for keeping their fleet intelligently connected. The fleet manager can simply select the ContiConnect Driver App from the Mercedes-Benz Trucks portal and then use the tire monitoring system via the existing in-cab display without the need for any additional hardware. The Mercedes-Benz Truck App Portal is a digital marketplace that allows trucks to be individually equipped with comfort- and efficiency-enhancing apps. The result is improved, intelligent connectivity between vehicle, trailer and infrastructure using a wide range of different solutions, plus the ability to capitalize on the potential for improvement with the help of apps for a trucker's daily routine.

Vehicle tracking makes scheduling easier
ContiConnect Live makes it possible to track the location of every vehicle. This gives certainty, makes vehicle scheduling easier and optimizes our customers' internal processes.

“Our 40 trucks and 55 trailers handle payloads of up to 28 metric tons on a daily basis, meaning that the tires are subject to significant loads. In order to optimize delivery reliability and also maximize safety, we always equip our fleet with the very latest technology. We use ContiConnect Live for continuous real-time tire monitoring. The app is integrated into the Mercedes-Benz Trucks telematics system and ensures stable trailer monitoring. The system makes it possible to check the tires at any time. The dispatcher in the office can check the tire data on the live portal, contact the driver if there are any discrepancies and, if necessary, organize a workshop appointment and reschedule shipment. Another plus is that every vehicle can be located. This gives us the certainty we need, makes vehicle scheduling easier and optimizes our internal processes, which in turn translates into benefits for our customers.”

Maximilian Helmö, Managing Director of haulage company Spedition Helmö

Haulage company Spedition Helmö

Fürstenstein (Germany)
40 trucks and 55 trailers
Goods carried: bulk and packaged goods transported nationally and internationally

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Digitalization – communications in the world of mobility

Connected Vehicles

Vehicle to vehicle, vehicle to traffic lights, vehicle to its environment: autonomous driving will only become an everyday reality with the help of connected car technology, taking the Internet of things to a whole new level. This will convert the automotive industry into a mobility service provider and vehicles into communication nodes.

Mobility transformation driven by interaction
Safe, free-flowing traffic is key to economic growth and prosperity. In future, traffic must and will be intelligently connected. Vehicles are becoming smarter all the time thanks to digitalization, while interaction between the various modes of transport and the infrastructure has a major role to play in transforming mobility.

Solutions for greater safety
The global connectivity brought about by the digital revolution is highlighting solutions for the transport industry that combine greater safety, conservation of resources, mobility, growth and sharing in that growth. Exchanging information, communicating and using telematics will be of vital importance for the future of the car and traffic in general.

New mobility service providers
It is impossible to say what traffic connectivity will look like 20 years from now, but exchanging information and communicating will without doubt play a prominent role. Technical innovations will lead to further improvements in terms of vehicle safety, efficiency and comfort. The automotive industry will become a mobility service provider.

Mobility as an assistant
In-vehicle information and communication systems and connectivity between the various modes of transport, road traffic and infrastructure are both key issues for the automotive industry. Vehicles will be turned into communication hubs for connected mobility.

Henry Kuhle, German Association of the Automotive Industry (VDA)
Head of Coordination Unit for Connected and Automated Driving

Vehicle-to-X

Vehicle-to-X (V2X) communication refers to communication between one vehicle and another (vehicle-to-vehicle or V2V) and communication between vehicles and the infrastructure (vehicle-to-infrastructure or V2I), such as traffic lights or other traffic management systems. This brings benefits when searching for a parking spot or alerting drivers to hazards along the route, such as snow, the end of a tailback or accidents.

Vehicle-to-X communication enables the vehicle to gather traffic information – for instance on traffic light phases or roadworks – in a fraction of a second and instantly process it.

Sensor Technology – Today and Tomorrow

Niklas Vauth in his role as Group Leader Product Development & Operations and Sven Wilhelmsen as Head of Product Management Digital Solutions form part of Continental's team of sensor technology experts. The two cast an eye to the future and explain where things are heading for sensors in automotive applications.

Continental brought out its second generation of tire sensors in 2022 with the upgraded ContiConnect. What technical advances have been made compared to the first generation?
Niklas Vauth: First of all, there is the Bluetooth functionality that now connects our sensors directly with our customers' smart devices, allowing tire inspections to be carried out even more efficiently. Then there is the update function, which will enables us to provide customers with added features in future. Our development team has also implemented a Mileage Estimator function that indicates a tire's remaining mileage, regardless of GPS and odometer data. This is the next step towards offering additional relevant data to complement tire pressure and temperature.

Niklas Vauth

What are the benefits to customers of the tire management system and the upgraded ContiConnect 2.0?
Sven Wilhelmsen: The pressure and temperature data helps our customers to optimize tires for day-to-day operation. The tire mileage information will, for the first time, enable our customers to monitor a tire's performance throughout its lifetime. The physical tire is therefore turned into a digital image that makes costs more transparent and identifies potential for improvement.

Where are things heading for tire sensor development?
Niklas Vauth: Besides the current launch of the second-generation sensors, our development team is already working on a variety of further innovations. Firstly, further software updates to the current sensor will enable us to provide more accurate information on tire wear in future. In addition to this, we are continually investigating the possibilities offered by new wireless communication technologies and how to prepare power supply for the increasing amount of computing power required. And, using a little imagination, what's to stop the tire itself from becoming one large black sensor in future? There are exciting times ahead!

So far, ContiConnect has been used in the commercial vehicle sector. Could the digital solutions provide an answer for passenger cars too?
Sven Wilhelmsen: ContiConnect 2.0 now comprises car and truck tires all the way up to large industrial tires. It therefore provides our fleet customers with a comprehensive portfolio of solutions. For example, we have been testing out electronic and software products for the digital age of car tires together with our partner Share Now for some time now (see article on page 25). Plus, there is the trend of new transport concepts using different types of vehicle, e.g. for last-mile delivery. →

Sven Wilhelmsen

For which classes of vehicle are tire pressure monitoring systems already a legal requirement?
Sven Wilhelmsen: Tire pressure monitoring systems have been mandatory for all new vehicles in the passenger car segment since 2014. The commercial vehicle market followed suit in July 2022, making them compulsory for all new type approvals. And from July 2024, the same will apply to all newly registered trucks, buses and trailers. This is sure to give further impetus to digitalization of the tire industry in Europe.

How much scope is left for developing the hardware? Will sensors basically retain the same form they have today? Will they get any smaller?
Niklas Vauth: For years now, electronics and sensor technology has clearly been decreasing in size in both the private and industrial sector. At the same time though, customer requirements are also changing. For instance, larger smartphones account for the majority of the market rather than smaller units. And we can see a similar trend emerging with tire electronics. As chips become smaller and smaller, the possibilities for registering and processing far more data are also increasing. With our second generation of sensors, we therefore succeeded in maintaining the size while increasing the range of functions several times over by adding another chip.

Is sensor production affected by the shortage of chips, or has it been? How did Continental tackle this situation?
Niklas Vauth: We, like all other companies, are also feeling the consequences of the fragile supply chains in certain product categories. So far, there have been no major supply shortages affecting sensor production in particular. This is largely down to the fact that we are currently in the process of switching from the first sensor generation to the second, so component availability had already been planned and guaranteed a long time in advance.

Can you see any other future uses for sensors in the transport and logistics industry?
Niklas Vauth: That's a very interesting question. We have seen a large number of new types of sensor being developed and sold in recent years. The question we should be asking, however, is: is it possible to draw direct or indirect conclusions from the data already available today with the skillful use of analytics and artificial intelligence? Conclusions about the amount of wear in individual components, for example. In this regard, monitoring and predictive maintenance will continue to play an important role in the transport industry in future. The past two years have clearly shown what happens when closely integrated supply chains break down due to unforeseen events.

“Efficiency awareness and sustainability have long since become vital competitive factors for transport companies. Consequently, low-rolling resistance tires already form part of the basic specification in many fleets. These days, though, we are looking for more – namely, sustainability throughout a tire’s life cycle.”

RALF BENACK, HEAD OF 360° SOLUTIONS AT CONTINENTAL TIRES GERMANY

Operational Safety and Sustainability

A digitalized fleet enables you to plan ahead when it comes to maintenance and servicing, and that makes it an effective tool for cutting CO_2 emissions and looking after resources, while also increasing the vehicles' operational safety. These are criteria that assist our customers in their daily work.
We gain from greater fleet efficiency, a reduction in fuel consumption of up to ten percent and an increase in tire mileage. As well as benefiting the environment, these factors also give a major boost to customer satisfaction. We are demonstrating that cost effectiveness and sustainability are perfectly compatible. At the same time as providing our services to customers, we are also helping them to become more sustainable too."

Gerhard Pomberg, Logistics Operations Manager at Remondis, Soest

Remondis
Soest (Germany)
80 vehicles
Goods carried: municipal and commercial waste disposal

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Going Green

The term ‘green logistics’ is used to refer to a whole host of aspects and measures designed to make the transport and logistics industry more sustainable. They include green fleet management with smart tire management.

Ecologically and economically efficient
Although climate and environmental protection do not form part of a logistics company’s main purpose, ecology is certainly considered to be a basic condition for the core service provided. ‘Green logistics’ and ecologically efficient transportation for the client are becoming an increasingly important priority in the transport and logistics industry, yet, at the same time, mounting cost pressures are restricting the capacity to implement the necessary measures. The industry as a whole is coming under tremendous economic pressure due to the relatively unspecific and easily substitutable nature of its product, “transport”. Profit margins are tight, price battles a daily occurrence. Haulage contractors and other transport companies are nevertheless also obliged to reduce their carbon footprint and lower their CO_2 emissions.

Legal framework
The UN Framework Convention on Climate Change, EU regulations and national legislation such as Germany’s Federal Climate Protection Act provide the legal framework for sustainable processes in logistics. Increasingly, however, it is the companies themselves who decide to incorporate sustainability goals into their corporate philosophy. This is motivated not just by ecological reasons, but also economic and social considerations. The days of sustainability being incompatible with cost effectiveness are long gone.

Holistic green logistics
So far, many fleet operators have seen a switch to alternative drive systems as holding the key to a more sustainable fleet. However, industry experts also highlight other aspects: digitalization of processes, emissions reduction, fuel savings, resource-efficient driving and driver training, optimization of transported loads and optimized trip planning.

Green logistics with Continental
Tire manufacturer and solution provider Continental has combined its portfolio for green fleet management into the Conti 360° Fleet Solutions service package – a professional all-encompassing service for tires that is in touch with customers’ needs, with a modular structure to cater to the diversity of the logistics industry. All with the aim of lowering emissions, conserving resources and allowing everyone to run a green fleet.

Targeting Sustainability

Logistics service providers along with industrial and commercial enterprises have been establishing sustainability as part of their corporate strategy for a long time now. By Prof. Ulrich Müller-Steinfahrt.

Logistics service providers along with industrial and commercial enterprises have been establishing sustainability as a key element of their corporate strategy for a long time now. They set themselves clear goals, often with 2030 at the end of the timescale and focusing on making the entire company carbon neutral. Some have allowed themselves an even shorter timeframe, including Siemens, Bosch, Hella, Aldi Süd, Kühne&Nagel and DB Schenker. In the logistics sector, large and medium-sized businesses alike are highly committed in their pursuit of sustainability. Around 65 percent of the 30 largest logistics service providers publish their own sustainability reports. They frequently take their cue from the three pillars of sustainability: ecology, economy and the social side.

Business comes down to price
Although customers often look for sustainability activities or carbon-neutral transport services when choosing a logistics company, they are generally rather unwilling to pay the corresponding increase in price. Being able to boast a low carbon footprint and use product sustainability as a selling point is great, of course, but the strained economic situation makes it difficult to implement the necessary measures.

Climate protection and efficiency improvements
Logistics providers and haulage companies therefore tend to adopt measures for improving climate protection that also increase the efficiency of their own processes, such as transport logistics, and help to cut costs. Social aspects for boosting employee retention – particularly the limited number of logistics specialists, including drivers – are also a crucial consideration.

Pool of green logistics measures
Although it is often primarily ecological sustainability that is addressed under the banner of green logistics, many companies take a much broader and holistic approach to the issue of sustainability, just as we do at the "Sustainability" focus group of the German Logistics Association (BVL). When it comes to sustainable transport logistics, large fleet operators in particular see a switch to alternative drive systems as the solution. The focus is on zero-emission vehicles, especially electrified vehicles and, looking further ahead, hydrogen drive systems. Our focus group carries out a holistic examination of the measures companies could deploy to make their logistics operations sustainable. We have developed a wide-ranging pool of best practice measures, some of which deal with how to achieve 'green' transport logistics. This includes aspects such as saving fuel by means of resource-efficient driving and driver training. Optimization of transport capacity utilization using data-based prescheduling methods, optimized dynamic trip planning, digitalization of processes with emissions savings, as well as new collaborative approaches such as fleet sharing schemes and jointly making maximum use of capacity through data transparency are all already being successfully implemented.

Digitalization as a lever
Digitalization especially is a key lever for making logistics more sustainable. This includes replacing shipping and customs documents with digital solutions. The BVL has developed a digital delivery note for this purpose as part of another focus group in collaboration with GS1. Real-time tracking of both shipments and transport vehicles in order to optimize capacity utilization is an equally important aspect to consider.

"Digitalization is a key lever for making logistics more sustainable."

Prof. Ulrich Müller-Steinfahrt
Head of the Institute for Applied Logistics at Würzburg University of Applied Sciences, Professor of Logistics and Supply Chain Management, Sustainability Officer at Würzburg University of Applied Sciences, leader of the "Sustainability" focus group of the German Logistics Association (BVL)

“Our large-volume transports cover a lot of unsurfaced ground at construction sites, which means we are no strangers to tire damage. With ContiConnect we can see in real time if the tires are in good shape and react immediately if the pressure or temperature of the tires changes. For us it’s very important that ContiConnect Live can be integrated problem-free into our telematics and that the driver can monitor tire pressures while on the move. A Bluetooth dongle is used to send the tire data to the cloud in real time via a central telematics unit. There, it can be accessed via the web portal, also in real time. With ContiConnect Live, a stationary reader station is redundant. In the web portal, we have real-time access to a detailed vehicle overview, including alarm, tire pressure and tire temperature history. Added to which, the vehicle’s location is transmitted via GPS and the operating hours of the tires recorded. ContiConnect Live therefore allows us to monitor the tires flexibly – regardless of which construction site or mountain village the vehicles are working in.”

Michael Doßwald, fleet manager at haulage company Spedition Zink

Haulage company Spedition Zink
Rheinau (Germany)
Vehicles: 17 two- and three-axle trucks with l ow-loader trailers and semitrailer tractors
Goods carried: heavy and oversize loads such as prefabricated houses, construction machinery, airplanes, military equipment

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“Our pilot project with SHARE NOW offers another glimpse into the future of Continental’s smart, digital tire solutions.”

TANSU ISIK, HEAD OF BUSINESS DEVELOPMENT AT CONTINENTAL TIRES GERMANY

New Forms of Mobility

Connected data with SHARE NOW

Cloud-based Monitoring

Our collaboration illustrates the added value that can be obtained from interconnecting tires, sensors, telemetry data, algorithms and the cloud.

Continental and SHARE NOW Denmark have been working together since 2020. Since the start of 2022, we have had a Conti360° Solutions contract in place to handle all our tire management. The fleet numbers around 700 vehicles, some 65 percent of which are electrically powered while 35 percent have a combustion engine. This allows us to focus on our core business with new mobility concepts, certain in the knowledge that our fleet of vehicles is always operational. Continental is a partner who understands us.

Quick and cost efficient
Continental supplies us with premium tires and services. The ContiConnect digital tire pressure monitoring system measures the pressure of the tires in real time. This data is relayed to our fleet manager using the cloud, enabling him to view the current condition of the tires on the vehicles at all times and take any action necessary. The permanent availability of data allows us to carry out fleet management in a quick, cost-efficient way. Low tire pressure causes higher rolling resistance leading to increased fuel consumption and tire wear, which are both detrimental to us – from an environmental and from a cost perspective. This also ensures we don't have customers nervously driving around in cars with a flashing warning light indicating low tire pressure.

Data connectivity for smart mobility
In March 2022, we adopted tread depth monitoring for the whole fleet. The smart, digital solutions resulting from data connectivity will help to ensure that it will be possible to carry out tire maintenance or replacement exactly when required in future. This will enable us to significantly boost the safety and productivity of our fleet at the same time as cutting costs.

Steen Herløv Andersen,
Operational Manager
SHARE NOW Denmark

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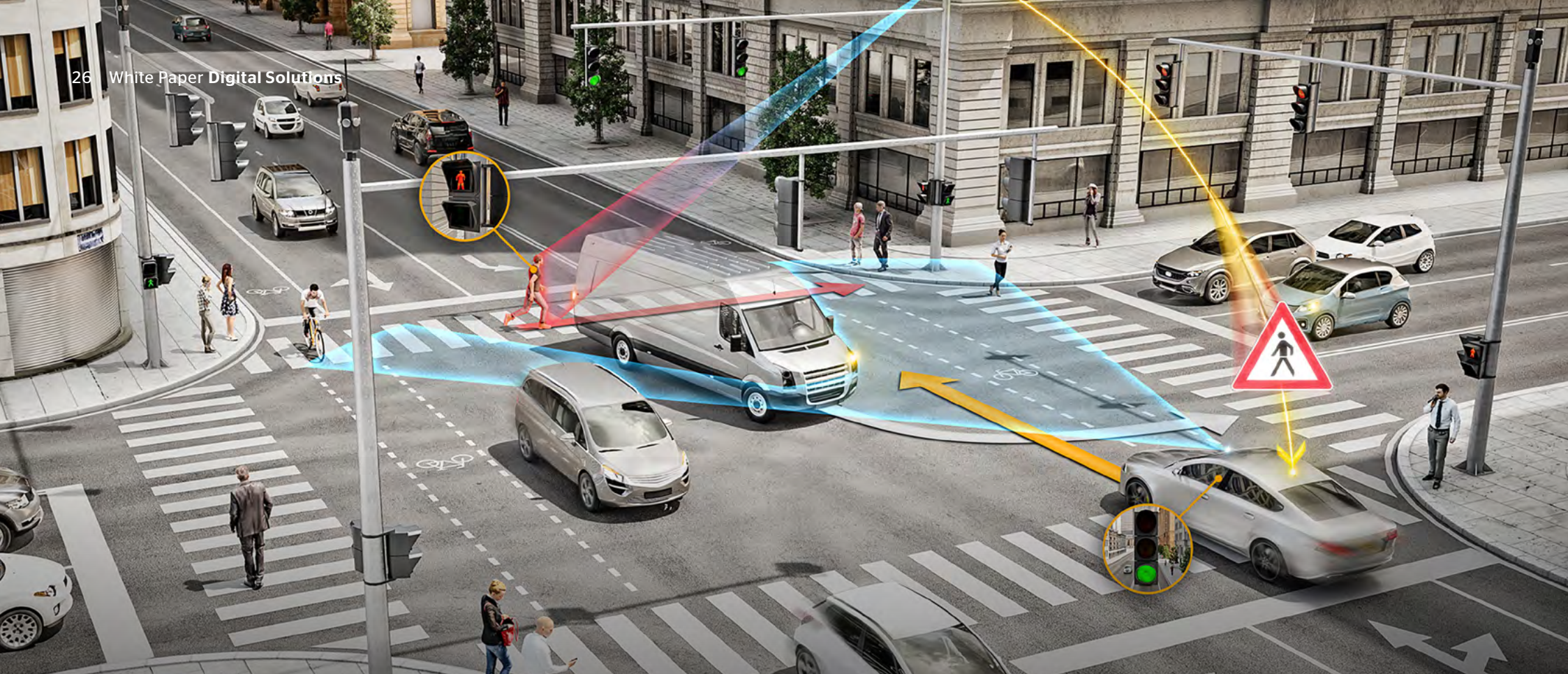

Automated Driving in the City

Continental is developing urban mobility of the future as part of CITY joint project.

Continental is working on technologies for human-machine interaction and intelligent junctions as well as special driving functions for inner-city intersections and bottlenecks as part of the @CITY joint project for automated driving in cities. A total of 15 companies, universities and research institutes are involved in the project, supported by the German Federal Ministry for Economic Affairs and Climate Action. Mastering urban traffic is considered to be the ultimate challenge of automated driving. The highly complex traffic situations that occur there call for immense software expertise and high-performance sensor technology and processing capacity. Up to now, when people talk about automated driving, they usually mean assisted driving on motorways or similar types of road. “Narrow streets lined with parked cars, plus cyclists and pedestrians who also use the road or cross it, traffic lights, roundabouts – driving in city traffic is a far more complex affair,” says Marc Simon, one of the project managers for @CITY at Continental. “Continental has – under defined boundary conditions – combined and further refined prototype technologies that also enable automated driving in urban environments.” The innovations developed as part of the joint project bring the prospect of automated mobility in our cities much closer.

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On request, we can put you in touch with our colleagues from the various departments at Continental, who will provide expert information and answers to your questions.

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