VISIONS

AUTOMOTIVE | NO. 6

HIGHLIGHTS

VAHLE

INNOVATIVE SOLUTIONS

FOR THE FUTURE OF PRODUCTION

Dear readers, innovation enthusiasts and technology pioneers,

Welcome to the latest edition of VAHLE Visions – your glimpse behind the scenes of the future of production and intralogistics. The industry is at a turning point and facing a real sea change. Two forces are driving this change. On the one hand, there is economic pressure to produce more efficiently and cost-effectively. On the other hand is the new Machinery Regulation, which will take effect in 2027, presenting companies with new regulatory challenges. Together, these two factors lead to one key question: How can existing systems be made fit for the future without rebuilding them entirely?

The answer is retrofitting. Small upgrades can have a big impact. Retrofitting is much more than a technical measure. It is an approach that makes existing systems smarter, safer, and more sustainable. In short: **RetroFit for Future**.

What‘s particularly exciting is the combination of retrofitting and digitalization. With intelligent controls, smart data communication, and networked systems, we can transform existing machines into high-tech systems without starting from scratch. This approach saves time and resources while paving the way for an automated future.

In this issue, we‘ll show you how to make your application compliant with the new Machinery Regulation, explain why retrofitting is the most economical and environmentally friendly solution, and demonstrate how to transform a classic electric monorail system into a smart EHB. We also explore our latest products and innovations for the automotive industry, ranging from smart energy transmission to intelligent control solutions.

Join us as we explore the world of smart upgrades and great opportunities. We are convinced that the future begins not with new machines, but with improving what already exists.

Enjoy reading and discovering!

Your Vision. Our Solution.

SMALL CHANGES, BIG IMPACT

HOW A RETROFIT CAN MAKE YOUR PLANT FIT FOR THE FUTURE

Why now is the right time to modernize existing systems – and how you can keep an eye on the new Machinery Regulation while doing so.

New investment? Not necessarily.
Retrofitting updates your existing systems safely and efficiently while keeping an eye on the future. Learn why intelligent retrofitting is essential for cost control, sustainability, and compliance. Industrial plants are the backbone of production, and every unplanned outage results in costs and losses. What can you do when technology ages and legal requirements become more stringent?

The answer is retrofitting.
Retrofitting involves modernizing existing machines instead of replacing them completely, even in limited spaces and time constraints. In most cases, the upgrade is carried out in parallel with ongoing operations or even during them.

This saves investment, time, and resources. The right approach is crucial: precise, knowledgeable, and well-planned – because retrofitting means seamlessly integrating different trades without negatively impacting existing production.

Building something new on a greenfield site without disturbing anyone? Anyone can do that. The art lies in making existing systems smarter in the middle of ongoing operations. Thanks to modern control systems, new safety technology, and intelligent communication, old systems can be maintained and even prepared for the digital future.

THE NEW MACHINERY REGULATION AT A GLANCE: FIT FOR THE FUTURE WITH TARGETED RETROFITTING

Many of these upgrades can be completed without extended downtime or complex retrofitting processes. This means you can remain fully productive while gaining a competitive advantage ahead of the upcoming Machinery Regulation.

One thing is clear: the new requirements will demand additional safety measures, state-of-the-art technology, and comprehensive documentation. By retrofitting now, you can proactively implement these updates before they become mandatory.

Our advice is to view retrofitting as a strategic investment, not a simple repair. Each upgrade allows you to extract greater value from your system and gives you the time and flexibility to prepare for the major decisions of tomorrow. In the following pages, you will learn what the new Machinery Regulation means for system operators and how small actions today can eliminate major concerns tomorrow.

Five reasons why retrofitting is the better choice

- Saves up to 60 % of the costs compared to a new build
- Meets future safety and standard requirements
- Avoids long downtimes
- Increases energy efficiency and reduces operating costs
- Makes your plant smart and digitally ready for the future

RETRO

THE NEW MACHINERY REGULATION 2023/1230

WHAT PLANT OPERATORS NEED TO KNOW RIGHT NOW

New rules regarding safety, digitalization, and machine software will take effect in January 2027. Those who update their systems today can rest easy knowing they‘re making strategic provisions for the future.

The European Union replaced the previous Machinery Directive with Machinery Regulation 2023/1230. This new regulation will take effect on January 20, 2027 and impose significantly stricter requirements on plant operators, especially regarding functional safety, digital infrastructure, software validation, and cybersecurity. For machine and plant operators, retrofitting is no longer just an option for increasing efficiency; it is a mandatory requirement to ensure compliance with regulations.

Time is running out.
There is just over a year until the new Machinery Regulation takes effect. What is currently a directive will then become law. This will increase requirements for all operators, including those in automotive manufacturing, the packaging industry, and intralogistics.

The good news is that those who act now can address many of these challenges early on. A targeted retrofit enables technical modernization and the proactive implementation of the new requirements. This helps avoid downtime, ensure productivity, and minimize legal risks.

What exactly is changing?
With more than 300 pages of requirements, explanations, and appendices, the new regulation is not something you can just dip into. Although around 90 % of the content is taken from the well-known Machinery Directive, the new regulations significantly tighten the rules.

Software as a safety component
Every change must be documented and validated.

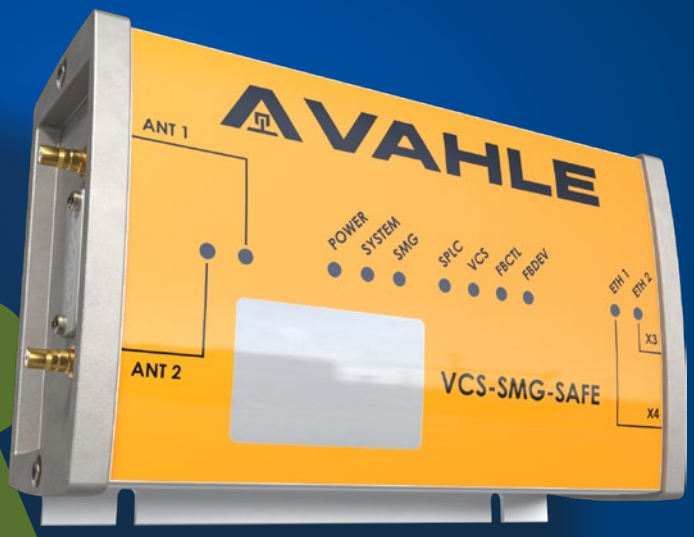
Focus on cybersecurity
Control systems and networks must be protected against manipulation.

Digital updates and AI are covered
Autonomous functions and predictive maintenance will be subject to stricter rules in the future.

New risk assessments
Every conversion requires new CE conformity.

Those who wait until 2026 or 2027 to update their systems risk having to update them twice: once according to the old law and again according to the new law. It is wise to consider retrofitting today with tomorrow‘s requirements in mind to ensure future-proofing.

FIT FOR FUTURE



WHERE IS THERE AN URGENT NEED FOR ACTION?

Anyone planning retrofit measures should familiarize themselves with these requirements, or consult experts who know which passages are crucial for each system. Systems that incorporate smart controls, networked sensors, and IT protection measures not only comply with the regulations, but are also prepared for digitalization and predictive maintenance.

A practical example
During an automotive retrofit, the power transmission, mobile control systems, and sensors were completely renewed. The result: SIL Category 3 safety and functional safety features, as well as a new CE declaration for the entire system. The company is now ready for 2027 and avoids duplicate adjustments.

Traditional conveyor and production systems, such as electric overhead conveyors, pallet conveyors, and skillet lines, are particularly affected. These systems are the backbone of many production lines in the automotive and supplier industries, so they are directly targeted by the regulation.

- High Loads
- Human-Machine Interaction
- Complex Controls

There is an urgent need to act in this area. Not only does retrofitting bring efficiency and safety gains, it also ensures that the requirements of the new Machinery Regulation are met in a timely manner, helping operators avoid planning and liability risks.

What to expect – and how to invest wisely

- Software will be considered safety-relevant in the future
- Functional safety features are a mandatory component of every system
- AI, digital updates, and remote maintenance require validation
- Traditional conveyor and production systems are particularly affected

Retrofitting ensures efficiency and availability, and relieves you of any concerns about the new regulation.

Reach out to us for guidance right away. Scan the QR code or go directly to **vahle.com/request**

FROM CLASSIC ELECTRIC MONORAIL SYSTEMS TO SMART AND SAFE CONVEYOR SYSTEMS

HOW CONVEYOR TECHNOLOGY IS BEING MADE FIT FOR THE FUTURE

Electric monorail systems, floor conveyors, and skillet lines form the backbone of modern production lines. While they are often mechanically indestructible, they are increasingly being reviewed in terms of control and safety technology, not least due to the new EU Machinery Regulation, which will take effect in 2027. For operators, this means action is needed. The good news is that targeted retrofitting can quickly and efficiently upgrade existing systems. Small interventions, big impact.

Conveyor systems, such as EMS, move heavy loads in direct human-machine interaction. Every weak point poses risks, ranging from unplanned downtime to security gaps that could lead to direct plant shutdowns. Outdated control systems, a lack of cybersecurity, and inadequate sensor technology are typical weak points of which operators are aware – and which will become real compliance pitfalls in the context of the new regulation.

The solution: retrofitting instead of new construction

A targeted upgrade transforms proven technology into a smart, secure conveyor system. Modern control systems ensure networked security, smart sensors enable predictive maintenance, and IT protection measures prevent tampering.

The advantage is that many of these measures can be implemented during ongoing operations, eliminating the need for months of downtime or expensive new construction.

Predictive upgrade for greater foresight

In addition to traditional modernization measures, our Smart Collector offers added value with a quick and easy-to-retrofit predictive maintenance upgrade.

While it doesn‘t directly contribute to compliance with the Machinery Regulation, it makes conveyor systems smart and safe from an additional perspective. By detecting anomalies early on, such as wear or external influences, the Smart Collector increases operational safety and availability. This improves the efficiency of the manufacturing process in the long term.

ADDED VALUE FOR OPERATORS: SAVE UP TO 60 %

Modernizing today can save up to 60% compared to a new build. It ensures CE conformity and creates a technological advantage. Retrofitting extends the service life, increases efficiency, improves availability, and integrates digital functions. It transforms a traditional EMS into a smart and safe conveyor system that meets tomorrow's requirements today.

The new Machinery Regulation brings new obligations and the opportunity to future-proof existing systems. Those who act early can reduce risks, increase plant availability, and strengthen their competitiveness. Retrofitting is more than a technical update; it's a strategic step toward smarter production and sustainable safety.

Five measures for your smart and safe EMS

- Modernize control systems and maintain CE compliance
- Renew the energy supply
- Bring safety technology up to the required SIL/PL level
- Integrate sensor technology for predictive maintenance
- Strengthen IT security

Your next step: Act now instead of waiting!

Take control of your production's future with a personalized retrofit strategy from VAHLE. Book an on-site checkup with our experts to uncover exactly which upgrades will maximize your system's performance and reliability. Scan the QR code or visit **vahle.com/request** to get in touch directly.

RETROFIT, SAFETY AND FUTURE-PROOFING

THE RIGHT CONTROL SYSTEM MAKES ALL THE DIFFERENCE

From retrofitting to safety to future-proofing, vDRIVE control systems take your conveyor technology to the next level. With the new EU Machinery Regulation requirements coming into force in 2027 and the opportunities offered by targeted upgrades, one thing is certain: the control system is at the heart of every modernization project. It connects, controls, and protects, determining the efficiency and future viability of your system. vDRIVE solutions from VAHLE make classic systems, such as electric monorail systems, electric floor conveyors, and skillet lines, fit for the future. Whether you want to easily and reliably modernize existing lines or meet the highest demands for flexibility and networking, the right system is just a step away.

The vDRIVE portfolio: more functionality. More security. More efficiency.

VCS1

The proven all-rounder for retrofit

Ideal for operators who want to quickly, easily, and reliably future-proof existing systems. It is particularly suitable for classic applications, such as EMS systems. It is robust, efficient, and ready for tomorrow's requirements.

- Backward compatible & service-friendly
- Compatible with PCM, half-wave, and SMFA
- Upgrade option to Railbus & Functional Safety

VCSX

Maximum transparency and performance

Designed for the highest demands of flexibility, networking, and efficiency. It is the perfect solution for multi-axis applications, such as heavy-duty EMS, skillet lines, and other conveyor systems. It is powerful and scalable for complex production environments.

- Communication via SMGM and Power CAN bus
- Scalable for drives, sensors, and safety functions
- Open PROFINET and PROFIsafe architecture – no black box

VCS-SMG/PCB-SAFE

Directly integrated functional safety

Safety and compliance are built in. With the upcoming EU Machinery Regulation in mind, this system offers a reliable, compliant, and compact solution for standard-compliant control technology.

- TÜV-certified function blocks up to PL e/SIL 3
- Integrated shutdown and monitoring functions
- Simple configuration; no complex PLC programming required

It‘s more than an upgrade – it‘s your path to future-proofing

With vDRIVE and vCOM, you can rely on open systems while retaining full control over your plant. All functions are mapped directly in the PLC, and communication takes place via industry standards, such as PROFINET and PROFIsafe. Thanks to open libraries for Siemens (S7 and TIA Portal), your system will remain flexible and future-proof. Retrofitting means more than just adaptation; it provides a real performance boost.

However, vDRIVE is more than just an upgrade; it offers real added value. The solutions are retrofittable and backward compatible. They already meet the requirements of Machinery Regulation 2027 and integrate functional safety directly into the control system. Transparency and openness ensure that your system is not a black box.

Best of all, implementation is quick and easy.

Is your system ready for the next step?

Schedule your retrofit consultation and discover how VAHLE systems can future-proof your production. Our experts will guide you through tailored modernization strategies that prepare your operations for tomorrow’s demands. Scan the QR code or visit **vahle.com/request** to get in touch directly.

UPGRADE FOR GREATER EFFICIENCY AND SAFETY

MAKE YOUR SYSTEM FIT FOR THE FUTURE

Take advantage of this opportunity to update your existing conveyor technology to meet new requirements. With a targeted retrofit, you can increase efficiency, comply with upcoming Machinery Regulations, and prepare your system for the digital age – without long downtimes or significant investments. Our experts will advise you individually and show you how to future-proof your production with smart upgrades.

Schedule a free consultation!
Scan the QR code or visit **vahle.com/request**

11/25

Paul Vahle GmbH & Co. KG
Westicker Str. 52
59174 Kamen
Germany

+49 2307 7040
info@vahle.com
vahle.com

You can find your local contact at: vahle.com/contact

PUBLISHER | Paul Vahle GmbH & Co. KG (s. l.)
REPRESENTED BY | Paul Vahle Verwaltungs GmbH (Managing and personally liable partner), this represented by Dipl.-Ing. Achim Dries (Managing Director)
REGISTRATION IN THE COMMERCIAL REGISTER | Register court: Local court Hamm, Registration number: HR B 4495
RESPONSIBLE FOR CONTENT | Dr. Andreas Jung, Paul Vahle GmbH & Co. KG (left side)
TEXT & DESIGN | Paul Vahle GmbH & Co. KG (left side)
PRINT | Druckerei Schmidt, Ley + Wiegandt GmbH + Co. KG, An der Wethmarheide 36, 44536 Lünen