

Thinkers & Makers

The Akkodis tech magazine



In the age of AI

all algorithms
still matter

**Cloud was never
meant to do everything**

**Towards self-diagnosing
and self-repairing EV
charging stations**

AI in the air:
time for aerospace to scale
the AI opportunity

Make Incredible Happen

Welcome to Thinkers & Makers, the Digital Engineering Tech Magazine

Thinkers & Makers is an inclusive concept that humanizes the approach to engineering and technology. It encompasses the breadth of our people and how we identify and solve problems at Akkodis. We are Thinkers who stretch outside their comfort zones to drive innovation, and Makers who team up with clients and partners to turn those innovations into tangible solutions. Together, we enable a smarter, more sustainable tomorrow. This is the 'Smart' in Smart Industry...and it will be brought to life over and over again in this, and every issue of Thinkers & Makers magazine.



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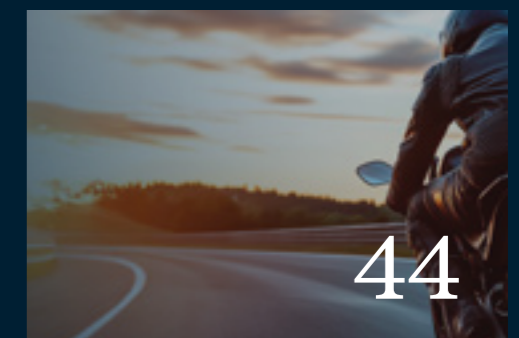
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Editorial



Jo Debecker
President and CEO of Akkodis

Navigating transformation:
**finding balance in a
rapidly changing world**

I'm delighted to welcome you to a new issue of Thinkers & Makers,

Akkodis' quarterly magazine. As we move deeper into an era defined by rapid technological change, one lesson stands out: progress is not just about embracing innovation, but about finding the right balance—between scale and simplicity, automation and human judgment, ambition and responsibility.

This issue explores how organizations and individuals are navigating transformation by adapting to new realities and making thoughtful choices. Across industries, we see that success comes not from chasing every new tool, but from understanding when and how to deploy technology for the greatest impact. The ability to discern which solutions truly serve our clients and partners best is a skill that lies at the heart of Akkodis Intelligence, our commitment to combining advanced technology with deep expertise and human insight.



Consider the evolution of AI and cloud computing. The articles here reveal a shift from “bigger is better” to a more nuanced approach—where both classic algorithms and Edge computing play vital roles alongside human expertise. It’s a story of equilibrium: whether it’s choosing the right algorithm over AI for a business challenge, or rebalancing intelligence between cloud and Edge, these stories illustrate how efficiency, resilience and regulatory clarity are achieved by matching solutions to context – deploying technology thoughtfully, and always guided by human insight.

In aerospace and defense, the journey is equally dynamic. AI is accelerating development and optimizing operations, but the path forward demands rigorous standards, adaptability and a willingness to rethink legacy systems. The most meaningful advances are those that blend technical innovation with deep domain knowledge and a culture open to change.

Safety and human well-being remain at the heart of our work. The story of the revamped airbag jacket for motorcyclists is a testament to multidisciplinary collaboration—where engineering, digital expertise and user-centered design converge to protect lives on the open road. It’s a reminder that technology’s true value is measured by its impact on people.

Throughout this issue, you’ll find examples of organizations walking the tightrope between opportunity and risk, speed and thoroughness, innovation and reliability. The common thread is adaptability: the ability to respond to complexity with clarity, to merge diverse perspectives and to create solutions that are both ambitious and practical.

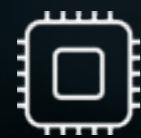
As you read, I hope you’re inspired by these stories of balance, agility, and purposeful transformation. In a world that never stands still, our greatest strength is our capacity to adapt—and to shape change with intention and care. It’s our Akkodis Thinkers & Makers who truly embody this spirit: experts who unite human insight with technological excellence, ensuring every innovation delivers business value and meaningful impact.

Happy reading!

Jo Debecker
President and CEO

In the age of AI

all algorithms still matter



Data Analytics
& AI

As businesses embrace emerging digital technologies, AI has vast potential—but is not always the right answer.

With digital transformation in focus for businesses across a multitude of sectors, artificial intelligence (AI) has a crucial role to play.

But AI is nothing without human expertise, and it is far from the only solution for businesses looking to optimize their processes.

It's not just about having the skills to know how to best deploy the fast-changing range of AI tools available.

It's also about knowing when it's best not to use AI at all.



“

When answers become cheap, the question becomes really important

Cassie Kozyrov, CEO Kozyr

Different challenges

AI has the potential to change the way we do business—in many areas it is already transforming the working environment—but exploiting its potential to the full depends on human skill.

The challenges for an aerospace manufacturer optimizing design features and a pharmaceutical company managing orders across multiple production facilities are completely different ones—and different scenarios, datasets and end-goals need to be managed in different ways.

The first step is identifying the challenges—as data scientist and Kozyr CEO Cassie Kozyrov says, “When answers become cheap, the question becomes really important.”

Asking good questions relies on in-depth expertise to drill down into specific business areas and pinpoint the problems to be solved.

That deep knowledge then needs to be combined with broader digital expertise to line up the targeted tools that can address those challenges.

AI as an intermediary

If humans—the experts—can pin down the specifications of a particular business niche and the challenges it faces, they can identify the patterns or create the tool that will be able to work on it efficiently.

In this way of working, when AI is used, it is as an intermediary: the humans handle the ambiguity, defining specifications, while AI can perform targeted tasks such as generating code or searching existing libraries for the tools needed to complete the task. In the right context, AI can bridge the gap between the expert's intuition and the rigorous formalization needed by the algorithm, which can be cumbersome for the expert to map out.

In some cases, the answer is not AI at all. If you understand the task, how it is structured and what you want to achieve, is there any point in asking AI to complete it for you?

AI can be used to automate targeted areas within an overall project but in many cases, a standard algorithm will do the job just as well at a lower cost—and human expertise is needed to work out when this is the case or whether a combination of the two makes most sense.

AI is lauded for its ability to optimize but the real optimization stems from having the most efficient possible set-up in the first place to which to add AI tools—or not.

In the example of a pharmaceutical company looking to better organize the order dispatch process across different production sites, setting up an AI model to undertake the task would be costly, and risk being unreliable—more so the more sites are involved.

The logic of algorithms, from simple ones to more complex examples such as those used in operation research or optimization, can undertake that particular task efficiently at a lower cost.

Measuring gains

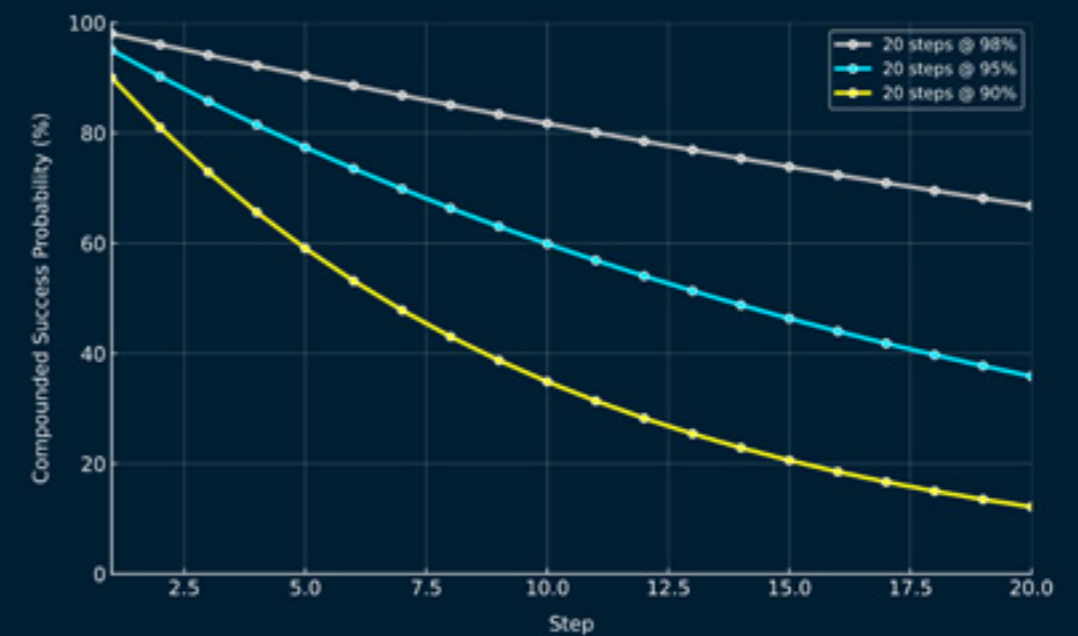
For companies looking to implement changes to their digital processes, quantifying the potential benefit is vital—but the reality is that it is often difficult to draw standardized conclusions about productivity gains from AI-driven systems.

Tailored solutions, combining classic algorithms with AI when it makes sense to do so, can provide answers to specific questions but it is hard to draw general conclusions that can be applied across the board—this is another example of a situation in which the human's capacity to assess progress and gains is vital.

When it does make sense to use AI, deciding which type of AI tool to go for is also a job for a human expert and their nuanced vision and analysis.

While generative AI is excellent at creating content, its output is non-deterministic, in other words unpredictable, so ill-suited to many businesses' need for stability and standardized results.

Probability of Task Success for Autonomous Agents



Large reasoning models can handle more complex tasks but may in reality have little to add to a fully trained human expert who understands the structure and objectives of the task.

It's sometimes time-consuming to explain underlying assumptions to AI, but letting it figure out the answer by itself without doing so can result in a solution that overlooks these implicit constraints.

Human experts can sidestep this ambiguity.

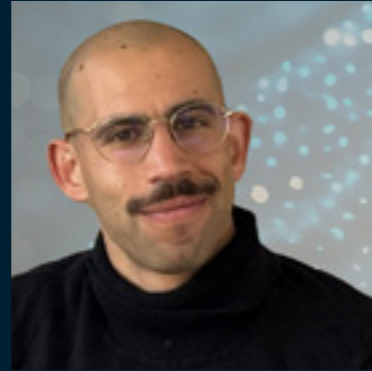
And deep learning models risk flagging up causation where only correlation exists, particularly if they are deployed in one-off or rare scenarios.

Standard algorithms, in this case, while less innovative, may be exactly what's required—but it takes a human expert with not only the deep knowledge of the individual sector but also the broad familiarity with all the different digital tools available to make that call.

Agentic AI, in which intelligent AI agents learn about their environment, and make their own decisions to achieve their objectives, improving performance through machine learning or knowledge acquisition, do have potential, but likewise are not always the best option to choose.

“Unless you're willing to delegate the task entirely, you, as a human, will have to complete it at least once,” says Mehdi Mounsif, AI Tech Lead at Akkodis. Once you've done that, it makes little sense to entrust the 'reasoning' part of the process to unreliable AI. It's better to explore the task using AI if needed, then crystallize the workflow as code, using AI in specific parts if that makes sense.”

But AI does have a role to play as a hybrid assistant—working closely with the human workforce on targeted areas.



Mehdi Mounsif
AI Tech Lead at Akkodis

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Tools with new handles

In the right hands, AI techniques can allow businesses to make better, more effective use of their evolving digital tools, whether classic algorithms or sophisticated and powerful but sometimes complex, costly or hard-to-use systems. In other words, powerful tools but ones without handles.

AI techniques can format data into a structured and predictable format that is then piped into these advanced systems, resulting in powerful and easily scalable analysis at an accessible cost.

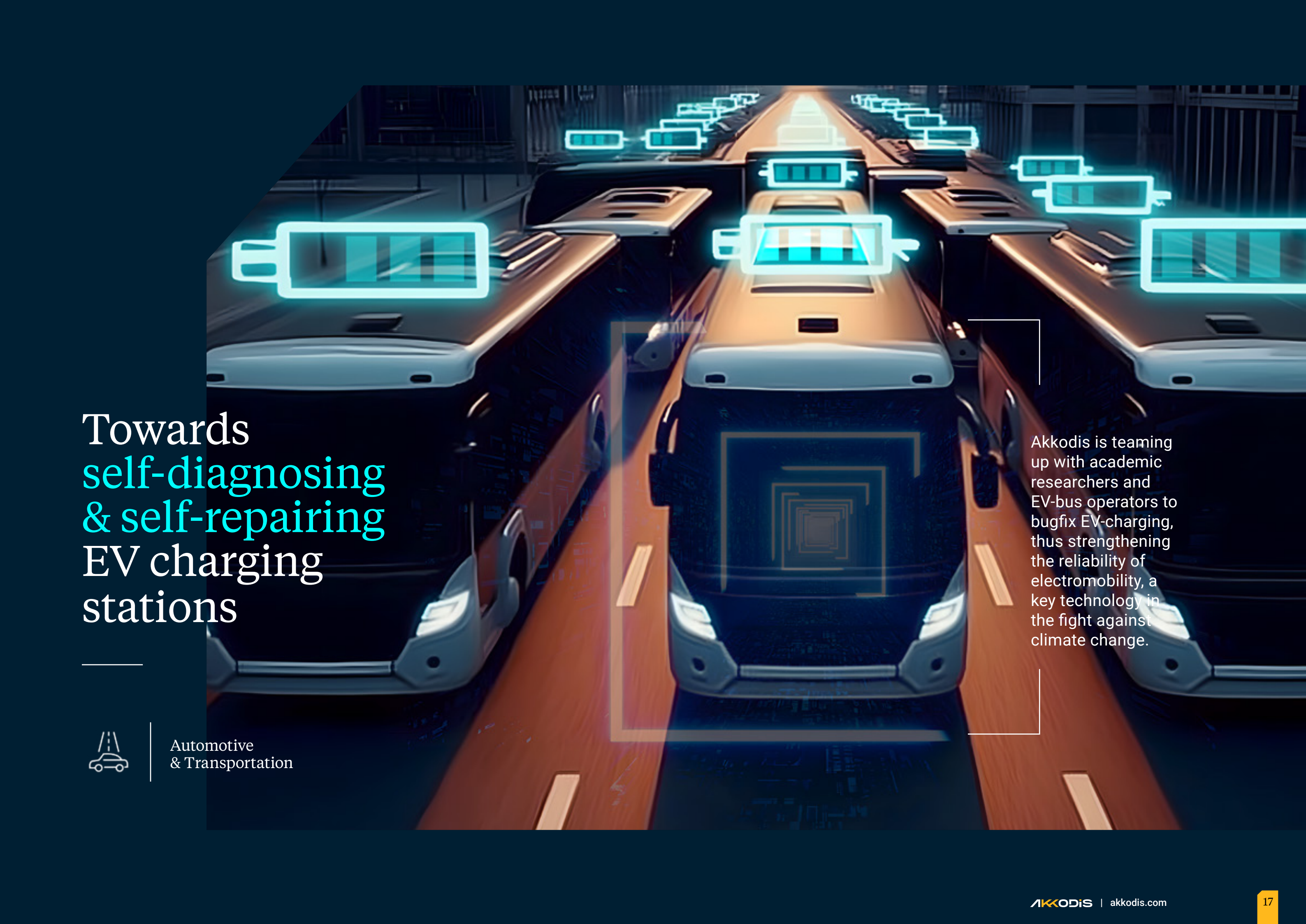
In this scenario, AI acts as the handle, and it's a transformative one, opening up the possibility of using tools that were previously out of reach.

But the humans' job is still a vital one. Ambiguity management—making choices, taking decisions and precisely defining what's at stake. Once that is complete AI can perform the individual tasks such as spotting patterns or analyzing data, or it can act as a pilot to allow other digital tools to do so.

Combining humans and digital technology—and AI and diverse digital tools, including standard algorithms—is where the value lies.



**Get in touch with our
Data Analytics & AI Experts**



Towards self-diagnosing & self-repairing EV charging stations

Akkodis is teaming up with academic researchers and EV-bus operators to bugfix EV-charging, thus strengthening the reliability of electromobility, a key technology in the fight against climate change.



Automotive
& Transportation



Electric vehicle owners will recognize the frustration, when they try to charge their car, only to discover that charging has been interrupted due to a charging station malfunction. They typically just swallow their frustration and move on to the next charger, hoping that one will work. Interrupted charging is an entirely different issue for a bus company with a fleet of 400 electric buses.

After ending their shift, drivers park their buses and connect them to a charger, readying them to ply the next day's routes. The drivers head home, unaware of any malfunction that could occur during charging overnight. The next morning, 10 or maybe 15 percent of the charging cycles might have been interrupted, leaving between 40 and 60 buses in the depot, creating inconvenience and delays for bus company and passengers alike.



Niklas Ehrlich
R&D Project Manager at Akkodis

Fail-safe charging

The overall goal of KI-LOAD is to secure a robust, and fail-safe charging infrastructure, significantly improving the efficiency of electromobility solutions for vehicle fleets.

Akkodis Research is cooperating with one of the biggest urban transport providers in Northern Germany which operates hundreds of electric buses, transporting thousands of passengers daily. Its charging infrastructure consists of a variety of charging stations from different manufacturers.

"The transport provider will serve as the real-life testing environment for the monitoring solutions we're developing in the project, which will run until 2028", Ehrlich explains.

Improving reliability

A research project plans to improve that situation, by leveraging AI-powered monitoring and diagnostics software to reduce charging station downtime, and thus increase vehicle availability. Akkodis Research, alongside academic researchers from the technical university of Munich are participating in the project, named KI-Load, financed by the Bavarian Ministry of State for Economics, Development and Technology.

"We want to improve the availability and reliability of charging infrastructure, mainly for professional users with fleets of vehicles", says R&D Project Manager Niklas Ehrlich.

"Currently, technical defects, communication errors, and inadequate maintenance lead to charge interruptions, malfunction and high costs. We believe we can address these issues with data-driven methods and Edge AI".

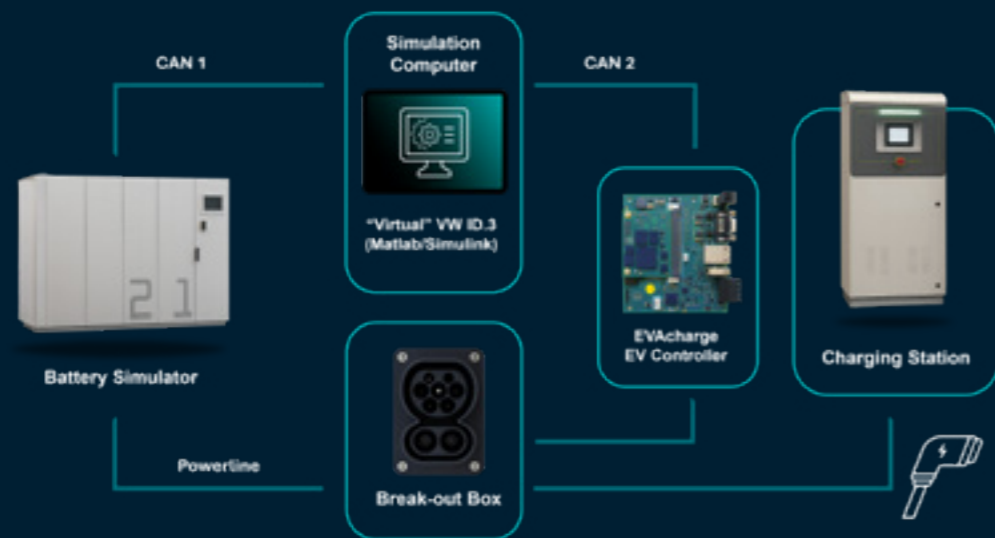
We want to improve the availability and reliability of charging infrastructure, mainly for professional users with fleets of vehicles.



Many reasons for malfunctions

In their effort to optimize charging, one of the key challenges Ehrlich and his team will be addressing is the many reasons for unreliable charging processes. One reason could be unstable communication between vehicle and charger, another could be hardware defects, yet another could be insufficient maintenance.

“All these issues are rarely analyzed and addressed in a structured manner. That makes correction of the defects complicated and time-consuming. Furthermore, we are lacking approaches that not only focus on urgent issues but also look at preventing malfunctions from happening”, says Erlich.



Test environment enabling controlled charging simulations with a virtual EV, battery simulator and commercial DC charger – the foundation for advanced diagnostics developed in KI-LOAD.

The KI-LOAD project will develop such a structured and predictive monitoring system, via a data-driven approach leveraging AI technologies. It involves a data pipeline, collecting data from charging stations, vehicles, and additional sensors, and analyzing the data to implement automated troubleshooting and predictive maintenance schedules based on AI-powered pattern recognition.

Implementing Edge-AI

The team is implementing Edge AI to analyze data in real-time and utilizing OCPP 2.1 and ISO 15118-20 communication protocols to establish a holistic view of both vehicle battery packs and charging stations, integrating the data into the central Charge Point Management System (CPMS).

According to Niklas Ehrlich, it is particularly beneficial, that several of the charging stations deployed at the urban transport provider are equipped with the Akkodis EVCharge charging communication control software, which facilitates easy transfer of additional high-quality data out of the vehicle and charging station.

The development of Akkodis' own charging solution EVCharge began in 2012, and it has since achieved a market share of more than 30% for DC fast charging points in Europe. The results of the KI-LOAD project will flow directly into downstream services integrated into EVCharge.

From data to test site

The KI-LOAD research and development team will start out with analyzing existing communication protocols in detail, to define the requirements for an optimized interface, able to quickly and reliably transfer data between charging station, CPMS (Charge Point Management System) and cloud-based services.

Based on the data, the root causes for charging malfunctions can be identified and grouped, for instance stemming from charging communication, power electronics or the car battery. The goal is to link specific error patterns to automated diagnostics and repair, thus enabling predictive maintenance actions. This requires AI-supported diagnostic models able to look at complex patterns in charging processes and identify problem areas.

For real-life testing of new diagnostics and maintenance solutions, the KI-LOAD team is using a test site integrating charging stations, Edge AI devices and control units. The test site allows for simulation of typical operating procedures and charging malfunctions. The main test site will be based at the technical university of Munich, while a mobile, smaller version of the site can be deployed at the facilities of the urban transport provider and at other partner sites.



Reducing malfunction by 50 per cent

According to Niklas Ehrlich, the outcome of KI-LOAD will be twofold: to reduce charging station downtime caused by faulty components by 50 per cent, and to increase the reliability of the charging process from 95 to a minimum of 97.5 per cent. Reaching that goal will be a significant contribution to EV-efficiency, particularly for commercial vehicle fleets.

Because, while charging malfunction may be a minor inconvenience for private EV-owners, it has a huge impact on EV-bus and EV-truck fleets, hampering operations, driving up cost, disrupting public transportation – and not least reducing the reliability of and trust in electromobility, a key technology in the fight against climate change.



**Get in touch with our
Automotive & Transportation Experts**

AI in the air

time for aerospace to scale the AI opportunity

AI is taking off in aerospace. Manufacturers and operators want to harness its potential to optimize an industry of great complexity, high cost, and stringent safety rules. To succeed, they must balance cost and benefit, as well as combine AI expertise with deep knowledge of the aerospace domain.



Aerospace
& Defense



The aerospace industry has always been at the forefront of technological innovation, constantly pushing the boundaries of mobility.

Now AI has arrived at the scene. With its potential to extract insights from large amounts of data, to optimize processes and increase productivity, it can help the industry handle the challenges lying ahead.

Challenges that are closely linked to its rapid growth.

Air traffic is now moving just below five billion travellers annually (2024). Commercial air travel will grow even further, with the number of aircraft transporting passengers and freight expected to double in the coming two decades.



Shaping the industry's trajectory

To sustain the rapid growth predicted, the sector must manage the challenges ahead. These are, just to name a few: a production backlog of 17,000 aircraft (2024), disrupted supply chains, geopolitical uncertainty, and rising operational costs. Together with slim profit margins and a growing focus on sustainability and emissions reduction, these factors will shape the industry's trajectory.

AI is addressing these multi-layered challenges of aerospace R&D.

It can accelerate training of pilots and mechanics, create personalized travel plans for passengers, optimize runway traffic and flight routes and enhance safety. It can be a force multiplier in aerospace design, it can optimize manufacturing, and it can serve as a powerful assistant in the complex and multiple-stakeholder world of maintenance, repair and operations.

With a backlog of 17,000 aircraft, the aviation industry faces its biggest production challenge ever.

AI transforming product design

To demonstrate the transformative potential of AI integration, let's pick one area to zoom in on: aerospace product design.

In product design, AI can improve and accelerate engineering tasks across the aerospace V-model, linking left-side development phases with right-side testing and validation.

Traditional aircraft design involves a combination of manual calculations, computer simulations, and physical testing. These methods can be time-consuming, resource-intensive, and error-prone. New AI-powered design tools allow for faster optimization and simulation of aircraft geometries, thus reducing wind tunnel testing, to determine an aircraft's aerodynamic performance.



Also, AI has the potential to optimize the design of digital tools indispensable to the engineering value chain, such as digital twins. Aircraft developers rely on virtual models to simulate aircraft and their various subsystems in a digital environment. On one hand, these digital twins are speeding up product development timelines by reducing the need to physically build and test things, thereby minimizing cost. On the other hand, digital twins are time-consuming and expensive to build. AI has the potential to change that, assisting engineers in constructing parts of a digital twin by analyzing text and image data automatically.



Merging two knowledge approaches

AI-powered solutions are already emerging in the aerospace domain, and many more will come. Aerospace industry players are finding ways to infuse AI into their value chain, while at the same time balancing cost and benefit. Walking that tricky tightrope will require some effort, when the promises of AI are being tested against the day-to-day reality of the aerospace industry with its relentless demand for precision and optimization.

No doubt, there is plenty of potential for harnessing AI to optimize aerospace engineering, manufacturing and MRO. The most important prerequisite to making it happen is to seamlessly merge two knowledge approaches.

The first one is the world of generic AI technologies and solutions, and its insight into algorithmics, requirements for data etc. The second is the aerospace domain with its expertise in engineering, manufacturing, maintenance, regulations etc. Only when these two are joined, will major gains start to be unlocked.

From there it takes high-quality data and experimenting, and a strong focus on value creation and profitability.

Thoroughness and agility needed

Developers and managers looking at how to harness AI, must be both thorough, agile, and able to walk the tightrope between the potential of AI and the specific aerospace business case at hand. While looking for meaningful use cases delivering value at scale, they must at the same time be aware of the fact, that AI-solutions won't be flawless. AI tools are still in an early stage, and until they've matured, they can't be blindly relied on in critical scenarios and must be accompanied with rigorous quality assurance and control.

No smooth sailing

Will the aerospace & AI journey be smooth sailing? Probably not, as AI is an emerging technology breaking new ground in aerospace. Moreover, developing AI powered solutions for aerospace requires high-quality data and strict compliance with the rigorous safety requirements of the sector.

That said, the time is ripe to move to the next level of digital transformation. And considering the industry's track record of continuous innovation, aerospace is in a unique position to seize the opportunities AI is offering.





The Expert Take
Insights From the Field

AI in aerospace and defense – *bubble or boom?*



Laura De La Cruz Redondo

Aerospace & Defense Division
Director at Akkodis



Laura, you have 20+ years of engineering experience in aerospace and defense, and oversee 500 tech consultants working in these domains for Akkodis clients.

We're now witnessing what seems like a technology paradigm shift, with AI grabbing the headlines everywhere. With your vast knowledge of the aerospace and defense industry, and of engineering methods and tools, we would like to know your thoughts on AI – bubble or boom?

To begin with, let's talk about the hype around AI. Is AI hype delivering concrete gains in aerospace and defense or is there a gap in the field between expectation and reality?

"I think there is a clear gap. The AI hype has generated high, and sometimes unrealistic, expectations. And a lot of fear as well, with some people fearing that AI will take their jobs. I don't have that fear. I'm convinced that AI will help us speed up and optimize our work. It will help us specialize more and allow us to focus on high-level challenges instead of doing repetitive tasks."

"As to the current state of AI application in defense and aerospace, I think it is fair to say that AI works well in controlled environments, and many initiatives are still in pilot phases. The challenges that remain, center around scalability and robustness in real-world scenarios. Nevertheless, at the same time I see areas where AI is making a significant difference."



Which areas are these, and what are in your opinion the greatest opportunities for AI in aerospace and defense?

“There are real advances in predictive maintenance, data analysis, and simulation, showing tangible progress, provided of course that risks and limitations are properly managed. When you look at products and services for the sector, I think the greatest opportunities lie in autonomous, real-time decision-making in complex environments. This goes across the whole value chain, from scenario simulation to logistics management, where AI can transform planning, execution, and operational adaptability.”

“But I’d like to add, that in the current context, the most realistic implementation opportunities are not as much the integration of AI into products and services. It’s more about streamlining and optimizing development processes. AI can help reduce or avoid bottlenecks, and automate processes, for instance via DevOps/AI applied to development. In areas such as predictive maintenance or in the generation and verification of software artifacts, AI is supporting and speeding up our work, for our own benefit as consultants and for the benefit of our clients.”

“

The real opportunity of AI is real-time autonomy in complex environments — reshaping planning, execution, and operational agility across defense and aerospace.

The defense sector is changing rapidly. Demand is soaring and there is a push for faster and shorter development cycles. Does AI have a role to play in adapting to that new defense industry reality?

“Absolutely. There will be no shortage of work in the coming years, and in all parts of the defense sector we must find ways to work faster. AI can support that and build on top of the automation of processes we’re already doing. For instance, you can train AI agents to help in problem solving and automate model-based systems engineering via DevOps and AI, to create predictable models faster and assess their behavior earlier than before. These simulations and predictions help you avoid time-consuming reworking.”

What are the challenges, when it comes to adopting AI in aerospace and defense?

“There are many, the most significant being certification and regulation, reliability and explainability, integration with legacy systems, and organizational culture.”

“Certifying AI for integration into systems such as avionics is currently experimental, given the incompatibility of current standards with systems like GPUs. According to the Data & AI Review Board (DARB) of NATO, the path toward certifiable AI is very complex, as it is multipurpose, which currently makes a general standard unrealistic. Instead, there are specific development guidelines for certain processes.”

“Explainability is also crucial. Understanding why AI makes a decision, helps build trust but does not guarantee reliability by itself; there must be traceability and performance evidence as well. Additionally, data governance, security by design, and certification frameworks are required to operate in critical environments.”

“Integration with legacy systems and models for verification and validation of software, especially in military sectors, is a very time-consuming process that needs improvement, currently taking months. AI integration can speed up these processes but will still have to maintain the strict quality standards of aeronautics and defense manufacturing.”

“Ultimately, organizational culture must shift toward embracing these tools and understanding the correct way to use them regarding security, limitations, and capabilities.”

Cloud was **never** meant to do **everything**

After a decade of centralization, AI is moving back to where decisions are made — on devices, in factories, on vessels, and in the physical world.



Article by
Per Kristian Egseth
CEO, Akkodis Group Nordics





Not every problem needs a billion-parameter model. Real-time intelligence belongs where decisions are made — at the Edge.


The reckoning of scale: why the LLM arms race is bringing AI back to earth

For the past several years, artificial intelligence has been driven by a single intoxicating belief: that bigger is always better. That if we simply scale to trillion-parameter models, limitless compute and hyperscale clouds, value will inevitably follow. It was a seductive premise—one that triggered an unprecedented race for size, power and computational domination.

The results were astonishing, but also revealing. In the frenzy to build ever-larger models, we normalized the use of expensive, energy-intensive and operationally fragile AI systems for tasks that were technologically straightforward. We abandoned the oldest rule in engineering: use the simplest solution that fits the purpose.

The consequences are now impossible to ignore. Organizations are spending billions on compute to solve problems that require only milliseconds of deterministic decision-making. Critical real-time tasks such as quality control, anomaly detection, and safety triggers, were never meant to be processed in distant clouds by billion-parameter models. They require ultra-low latency, predictability and locality—conditions only the Edge can realistically deliver.

And we're paying the price. Astronomical operational costs. A growing carbon burden. And the consolidation of strategic intelligence in the hands of a few global players. Industry stakeholders across the globe have begun to recognize the geopolitical and economic dangers of such dependency.



Edge isn't the cloud's replacement – it's intelligence moved back where it matters.

The Edge: where efficiency meets necessity


The market is already correcting this imbalance. Edge computing is not a replacement for the cloud, it is the necessary rebalancing. It represents the deliberate decentralization of intelligence: moving inference out of far-away clouds and back onto the devices, gateways and secure on-premise systems where data is created and decisions must happen.

This shift is not theoretical. It is powered by an extraordinary alignment of technical reality, economic pressure and regulatory force.

- Real-time performance: Eliminating cloud round-trip latency makes mission-critical systems – industrial robotics, autonomous platforms, automated safety – possible.
- Sovereignty, privacy and security: Local processing reduces supply-chain exposure, cross-border data risk and dependency on opaque cloud stacks.
- Regulation with teeth: NIS2 forces operators to strengthen cyber resilience and transparency; the EU AI Act demands traceability, local oversight and operational control for high-risk AI systems.

Edge dramatically simplifies compliance.

What was once dismissed as a niche IoT architecture is now becoming a structural cornerstone of intentional technology strategy.



The hybrid future: sovereignty and a rebalanced architecture

The future will not be won by a single paradigm. It is not cloud versus Edge—it is cloud for training, Edge for action.

Hyperscale and sovereign clouds will continue to carry the heavy workload of foundational model training, because nothing competes with centralized GPU muscle at scale. But the balance of power is shifting rapidly.

The cloud is evolving from the default location of all processing to the center of strategy, governance and orchestration.

Meanwhile, the Edge becomes the dominant site for high-volume, low-latency, regulated and cost-sensitive inference—where intelligence meets the physical world.

A more mature paradigm

The era of cloud monoculture is not ending. It is maturing. The past five years have exposed the limits of trying to solve every problem with infinite centralization.

That model was:

- Too expensive for routine tasks,
- Too slow for mission-critical ones,
- Too risky for regulators and sovereign nations.

The path forward is a deliberate rebalancing:
Centralized muscle for training. Decentralized intelligence for action.

A paradigm defined by proportionality, locality, sovereignty and operational clarity, rather than blind scale.

*The pendulum is not swinging away from the cloud.
It is finally finding equilibrium.*

Safety on the open road:

architecture revamp improves safety device for motorcyclists



Cloud, Infrastructure & Security

Smart personal protective equipment can improve safety for motorcycle riders, an important area of focus as two-wheeled vehicles account for a large number of road traffic accidents. Akkodis helped one experienced technical clothing manufacturer to revamp its airbag safety jacket to improve functionality.

Kickstarting a motorcycle and heading for the horizon brings motorcycle riders many things: a sense of freedom, adrenaline, a connection to the road as the wind whistles past them.

Unfortunately, it also brings them greater risk—unprotected by the body of a car and harder for other road users to see, motorcycle riders are particularly vulnerable to injuries and worse.

According to a 2023 World Health Organization (WHO) report on road safety, riders of motorcycles or other vehicles such as scooters account for 21% of the 1.19 million road traffic deaths worldwide.

Racing on a track also brings a sense of freedom and fulfills a need for speed, but likewise exposes drivers to the risk of injuries.



Better protection

With vehicle use set to keep increasing rapidly in the coming years, and a sharp rise in powered two- and three-wheeled vehicles forecast within that, improving safety for motorcycle users could have a significant impact on reducing mortality on highways.

The subject is already in focus at a global level, with the 2024 launch of the WHO's first global technical advisory group on powered two- and three wheeled vehicles, which was formed to look at how laws, policies, regulations, and research can reduce fatal crashes.

In the meantime, any technological advances that can improve safety outcomes for motorcycle riders as they enjoy their high-octane but high-risk pastime, can make a big difference.

Just as airbags protect car drivers in the event of a crash, they can help keep motorcyclists safer too—the difference is that motorcyclists can wear their own airbags, in the form of specially designed inflatable protective jackets.



Technical clothing

With the help of Akkodis experts, one manufacturer of protective equipment and technical gear for dynamic sports set out to update this key piece of safety gear.

The client already offered a jacket incorporating an airbag to protect motorcyclists in the event of a crash or a fall, both on roads and tracks. It inflates in the event of an accident, helping to protect the rider's body from injury.

The Akkodis team worked closely with the client to define an innovative hardware and software architecture that would allow them to design a new generation of the device, making it even more user-friendly and high-performing, improving the safety functionality and connecting it to a new generation app, also developed by the team.

The starting point of the project was a full-scale review of the device's existing set-up, and its architecture, explains Annunziata Fiorilli, Team Manager and Design Quality & Product Assurance Delivery Unit Manager at Akkodis.

"We worked with a cross-functional team made up of our electronics, digital and functional safety experts to provide the best solution to our client," she says.



Improving architecture

The project split into two main stages: design and development of the new architecture and developing the cloud-based app.

Starting from the need for a new architecture, the team also improved the device's safety functionality, by following the requirements of the ISO26262 standard and its V-model cycle.

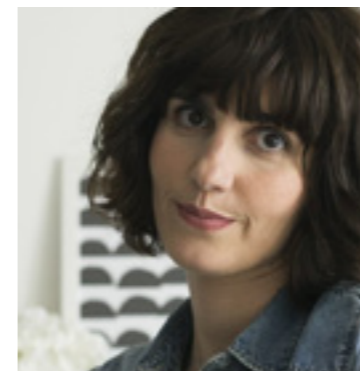
The safety goals were then deployed into safety requirements to define the new system architecture.

From the system requirements and architecture, the electronics engineers derived the sub system requirements, mapping out the hardware requirements and designing the new hardware and firmware for the device.

They verified the architecture through a full coverage test campaign and safety analyses at the end of the development, to demonstrate the robustness of the solution.

On the digital side, the team worked on developing a new Cloud-based application (AWS-based with lambda functions) to be used in the racing, road and urban scenarios, and could take the equipment's functionality further, allowing motorcyclists to control the device and also track it the event of theft.

"This multidisciplinary approach was critical," Fiorilli says, "since it involves different experts coordinated by our PMO, to meet the requirements of the project Gantt shared with the clients and design a safe application."



Annunziata Fiorilli

Team Manager and Design Quality & Product Assurance Delivery Unit Manager at Akkodis

This multi-disciplinary approach was critical,... to design a safe application.



Back to basics

The Akkodis team re-designed a new architecture, foreseeing a revamp of the device's hardware and firmware, with the objective of cost reduction.

The new board manages the deployment of the airbag as well as logging functions. The hardware and firmware development required modification of the microcontroller and development of drivers for new components, together with the development of a bootloader and a dual boot firmware.

The new architecture also integrated safety goals defined by the safety team through a risk assessment, based on the relevant ISO26262 functional safety standard governing E/E functionalities.

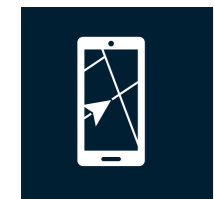
"Once you have set out safety goals, and designed each of them, you define a concept architecture that you can further deploy into the software and hardware subsystem, to reach that safety level," Fiorilli says.

The team designed and developed the system, hardware, and software for the electronic unit, capable of detecting unsafe maneuvers that would trigger the airbag.

Moreover, the solution integrated Bluetooth connectivity linked to a Cloud-based platform and developed a backend and Cloud solution for data management.

Akkodis designed a mobile app and web app to display statistics on usage, starting from UX design to the end-to-end validation of the system, through testing, simulation and analyses.

"We had to verify that once we had designed all the features, they were sufficiently robust. In the end we were able to demonstrate that the architecture that we developed can meet the functional and safety requirements," Fiorilli says.



App functionality

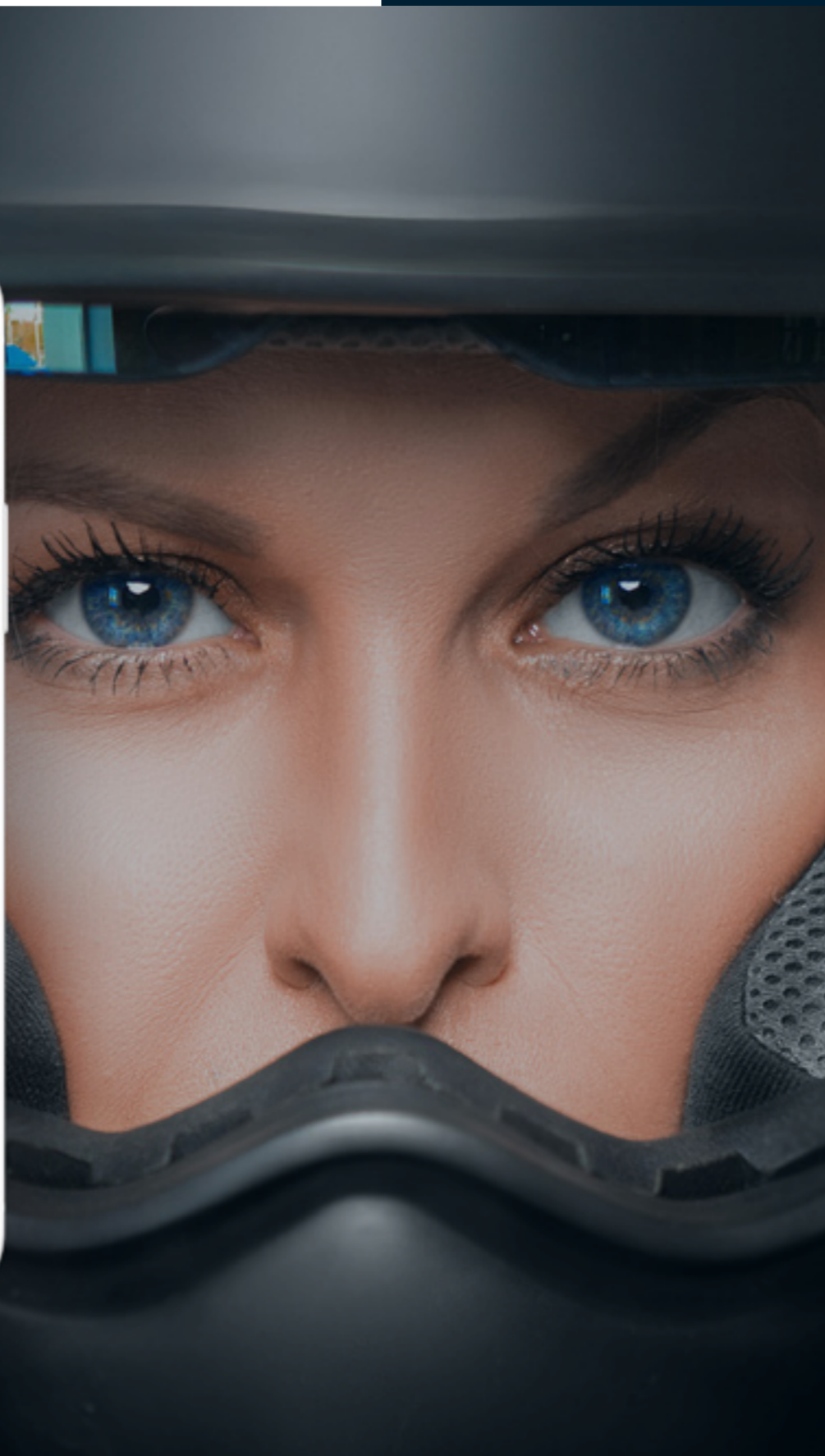
Adding a mobile app increases the functionality of the inflatable device.

For users, who can activate their device either manually, or remotely through the app, the system provides an extra level of protection, not only against injury but also against theft.

If the device is stolen, it can be locked down remotely and its location traced using GPS functionality.

The app also provides data on battery levels and how many times the device has been inflated, giving users ample warning of when they needed to replace the gas-inflation system.

For the manufacturer, with just one device at a time able to pair with the app, the system helps keep track of sales and usage.



Everyone a winner

To achieve all this, the Akkodis team brought skills honed in other sectors such as industry, automotive and rail to the project.

While the collaboration with the client has finished, the experience gained, including work on prototype construction and certification as well as system design, highlighting the team's multidisciplinary credentials, is likely to open many doors, Fiorilli believes—and everyone is a winner.

“The project was a milestone for us, as one of the first major multidisciplinary efforts in this domain,” Fiorilli says.

The manufacturer, for its part, has a revamped product that offers its clients the latest in safety technology.

And motorcyclists everywhere can take to the road more safely.



Get in touch with our Cloud, Infrastructure & Security Experts

About Akkodis

Akkodis is a global digital engineering consulting company that enables organizations to innovate and accelerate by applying technology to redefine how processes and products are developed, powered and optimized. With deep expertise across AI, data, cloud, Edge and software engineering, we combine technology and talent to deliver end-to-end solutions, from strategy and consulting to talent development and implementation. Our commitment to Akkodis Intelligence helps businesses connect the exponential power of technology with the irreplaceable strengths of human thinking and collaboration. Part of the Adecco Group and headquartered in Switzerland, Akkodis brings together 50,000 engineers and tech consultants in over 30 countries with services that span Consulting, Talent, Solutions, and Academy. With a cross-sector view and strong delivery capabilities, Akkodis empowers businesses to solve complex challenges and achieve sustainable impact.

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