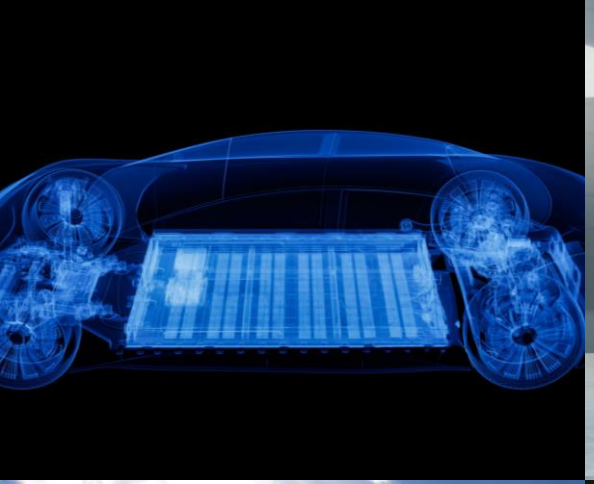
April 2024

Innovate

Trends and innovations that matter

The Industrialist
inspire. innovate. ignite.





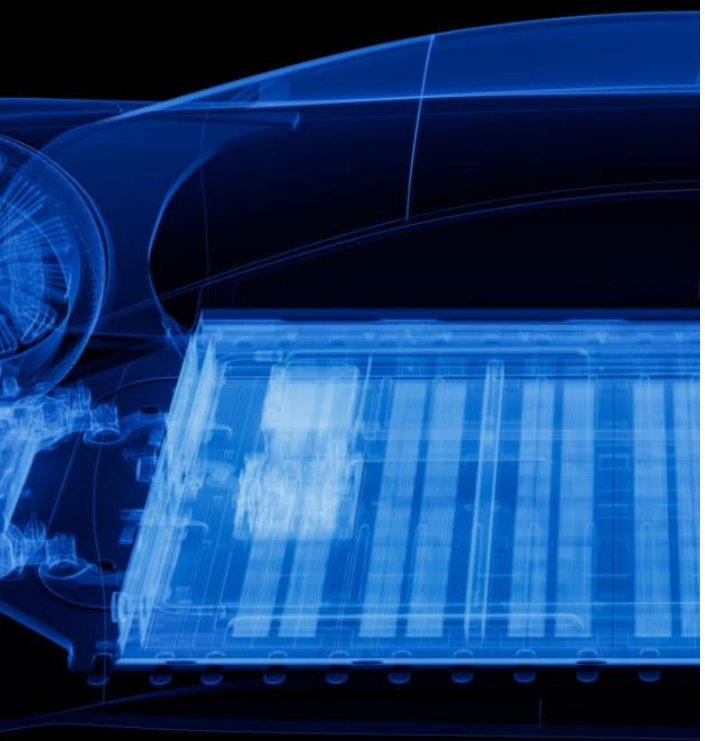


Learn about the latest announcements impacting the industry, from advancing decarbonization with the Multi-Regional Energy Management System (EMS), which optimizes renewable energy usage and storage systems; revolutionizing road maintenance with an AI-powered robot detecting and filling cracks before they turn into potholes; leveraging AI for smooth maintenance of China's high-speed rail system, and more.

Industrial is a front-runner in combining human ingenuity with technology and innovation.

Thomas Rinn

Senior Managing Director,
Global Industrial Lead, Accenture



01

SDVerse: B2B platform for automotive software

General Motors (GM), Magna, and Wipro have partnered to create SDVerse, a B2B sales platform for automotive software. Unlike traditional captive software development, SDVerse connects buyers and sellers through a digital platform, for streamlining the process and enhancing transparency. Sellers can list their software, while buyers can search and explore a comprehensive catalog. The platform aims to reduce costs, improve software quality, allocate resources efficiently, increase revenue for sellers, and provide an alternative to OEM insourcing.

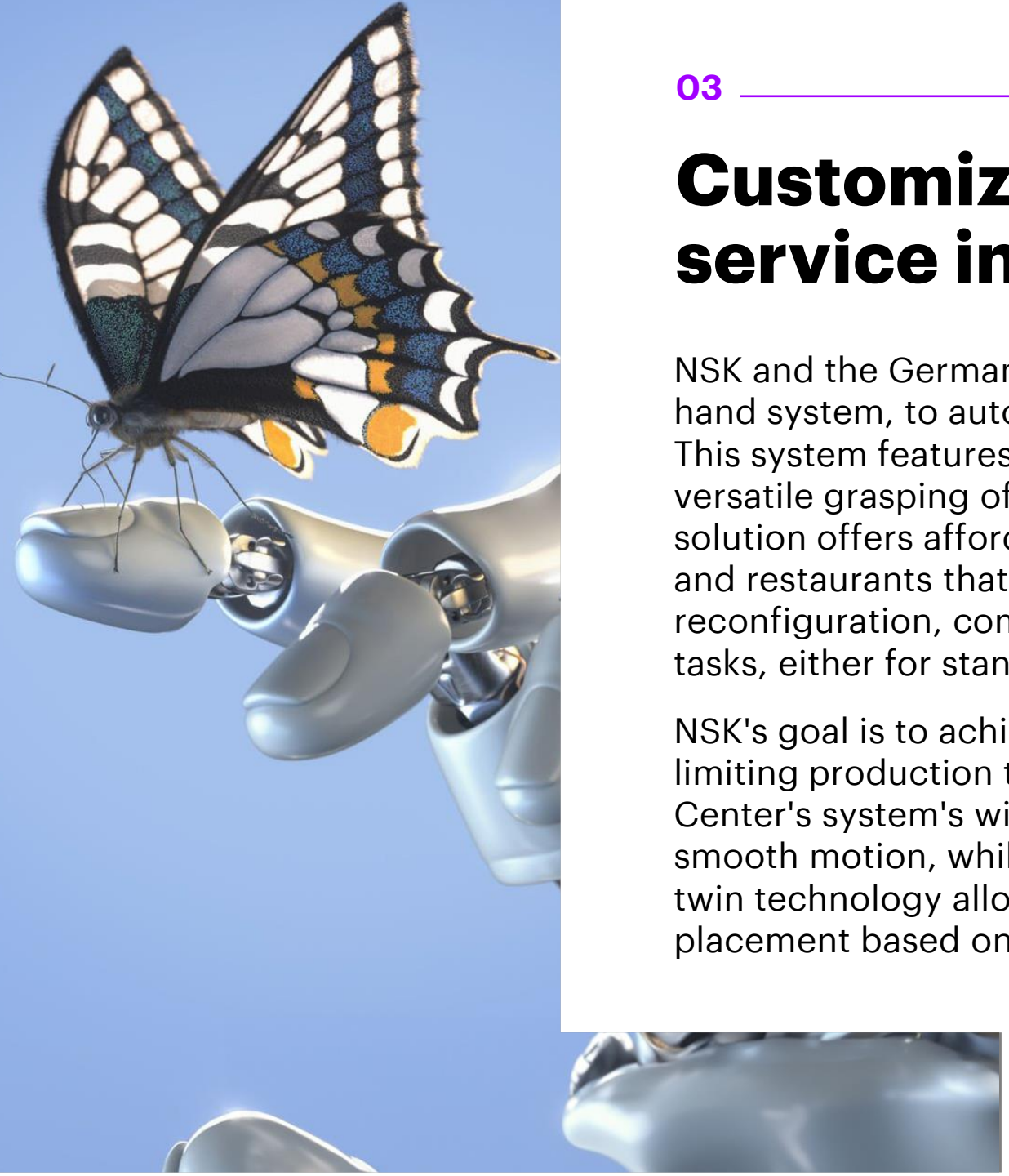
SDVerse is expected to feature hundreds of software products and is open to participants across the automotive value chain. The launch partners, including Ampere, FEV, Forvia, HL Mando, NXP Semiconductors, TTTech Auto and Valeo support SDVerse.

02

Mitsubishi Electric advances decarbonization with Multi-Regional EMS

Mitsubishi Electric announces a large-scale in-house verification of its "Multi-Regional Energy Management System" (EMS) solution, designed to support decarbonization goals across different hubs. The cloud-based service integrates digital power optimization technology with the proprietary software "BLEnDer" for comprehensive power market management. By connecting four hubs across three power areas, the company aims to optimize renewable energy usage and storage systems. Real-time linking of hubs will enable comprehensive evaluation of renewable energy forecasting, supply planning, and storage system operation. The in-house demonstration involves plants in different power areas, facilitating the evaluation and enhancement of technology for real-world applications.

Through this initiative, Mitsubishi Electric aims to strengthen its solutions for effective renewable energy management and contribute to global decarbonization efforts.



03

Customizable robotic hands for service industry automation

NSK and the German Aerospace Center are jointly developing a robotic hand system, to automate manual tasks particularly in the service industry. This system features individually customizable finger modules allowing for versatile grasping of various objects. Addressing labor shortages, this solution offers affordability and adaptability, crucial for sectors like retail and restaurants that have struggled to adopt robots. By enabling easy reconfiguration, companies can create robot hands tailored to different tasks, either for standard products or diverse objects.

NSK's goal is to achieve a low unit cost through mass production by limiting production to individual finger modules. The German Aerospace Center's system's wire drive technology enables gentle gripping and smooth motion, while NSK's detachable magnetic mechanism and digital twin technology allow quick layout changes and optimize finger module placement based on object size and shape.

04

Hitachi Rail launches Train Maintenance DX as a Service

Hitachi Rail has launched Train Maintenance DX as a Service, a solution aimed at enhancing train maintenance quality and efficiency for railway operators. This industry-first 'as a Service' offering leverages Hitachi Rail's digital expertise in train manufacturing from its Kasado Works in Japan. The service not only provides hardware but also offers expertise and IT solutions. Addressing challenges like labor shortages and inefficient work environments, the service aims to improve teamwork, motivation, and skill sharing among operators.

By introducing this service, operators can expect continuous enhancements in work efficiency and quality. By visualizing work environments and utilizing team-building platforms, Hitachi Rail enhances communication and motivation within on-site teams. Furthermore, initiatives like the vehicle metaverse and AI-driven inspection technology promise to further improve maintenance quality and efficiency.

05

Komatsu unveils AI-powered detection system for wheel loaders

Komatsu, a leading manufacturer of construction and mining equipment, has introduced an AI-based automatic detection support system for its large wheel loader, the "WA900-8R," aimed at improving safety and reducing downtime at mining sites. The system utilizes AI-image analysis to detect potential hazards such as falling bucket teeth during loading work and boulders around the vehicle, in real-time. This prevents damage to the equipment and minimizes operational interruptions. Equipped with camera units and AI technology, the system alerts operators through screen displays and warning sounds upon detecting such hazards.

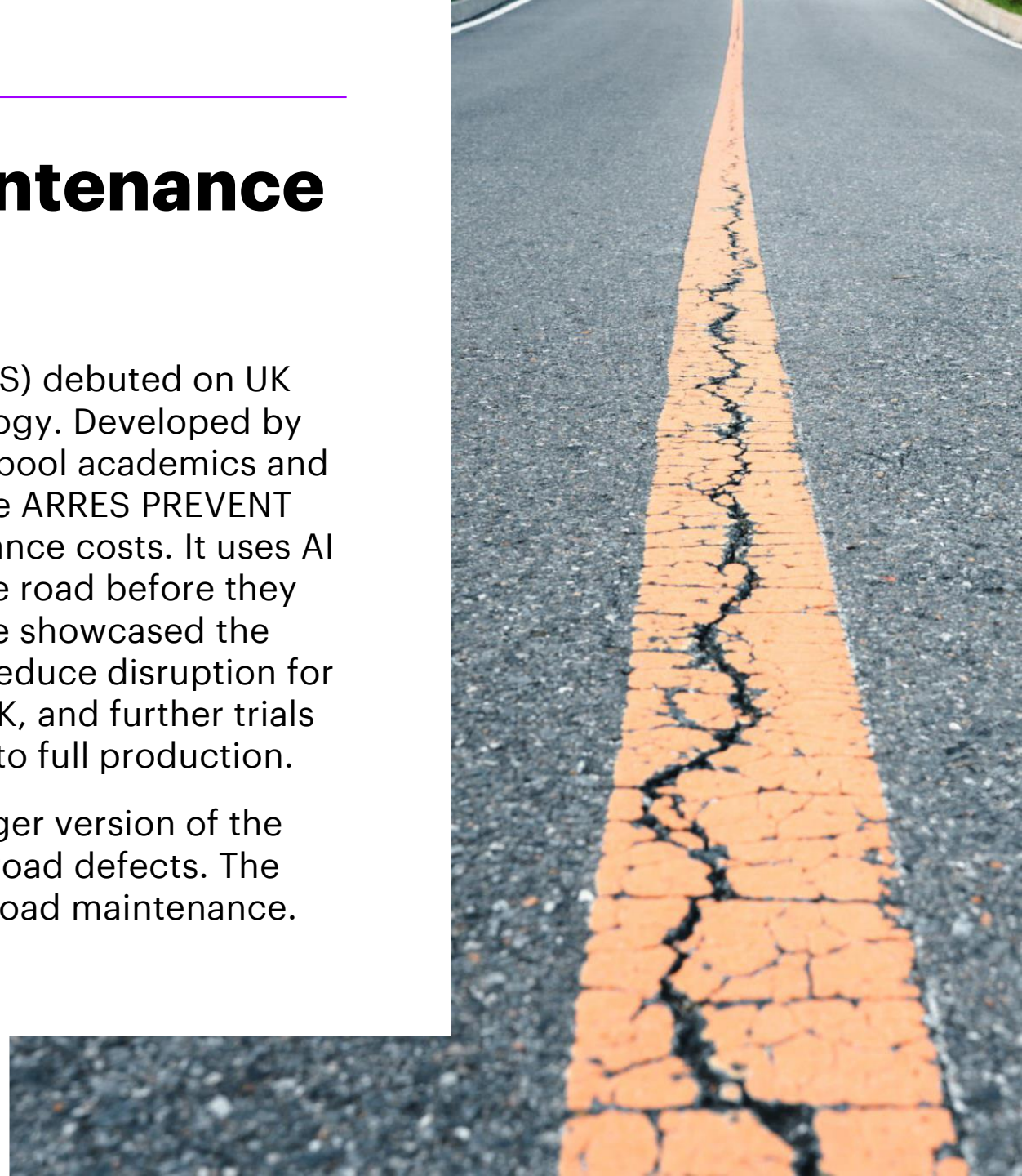
Komatsu plans to commence mass production of the system in fiscal year 2025, demonstrating its commitment to innovation and safety in the mining industry.

06

Revolutionizing road maintenance with AI-powered robot

Cutting-edge Autonomous Road Repair System (ARRES) debuted on UK roads, preventing potholes through AI-driven technology. Developed by Robotiz3d in collaboration with the University of Liverpool academics and Hertfordshire County Council Highways Engineers, the ARRES PREVENT robot is enhancing road safety and reducing maintenance costs. It uses AI and imaging technology to detect and fill cracks in the road before they turn into potholes. The successful trial in Hertfordshire showcased the potential of the technology to save time, money and reduce disruption for drivers. The project received funding from Innovate UK, and further trials and refinements are planned before the robot goes into full production.

Simultaneously, efforts are underway to develop a larger version of the machine that can effectively tackle a wider variety of road defects. The innovative technology has the potential to transform road maintenance.



07

AI ensures smooth operation of China’s massive high-speed rail network

China is using artificial intelligence (AI) to maintain its 45,000km high-speed rail network. An AI system in Beijing processes real-time data and alerts maintenance teams of abnormal situations within 40 minutes with 95% accuracy. This allows precise and timely maintenance and has resulted in fewer track faults and improved infrastructure conditions. Chinese railway scientists and engineers have collected and organized nearly 200 terabytes of data to train the AI system. The technology has improved the efficiency of new data analysis by 85 percent and enabled to issue regular nationwide warnings daily instead of earlier once a week.

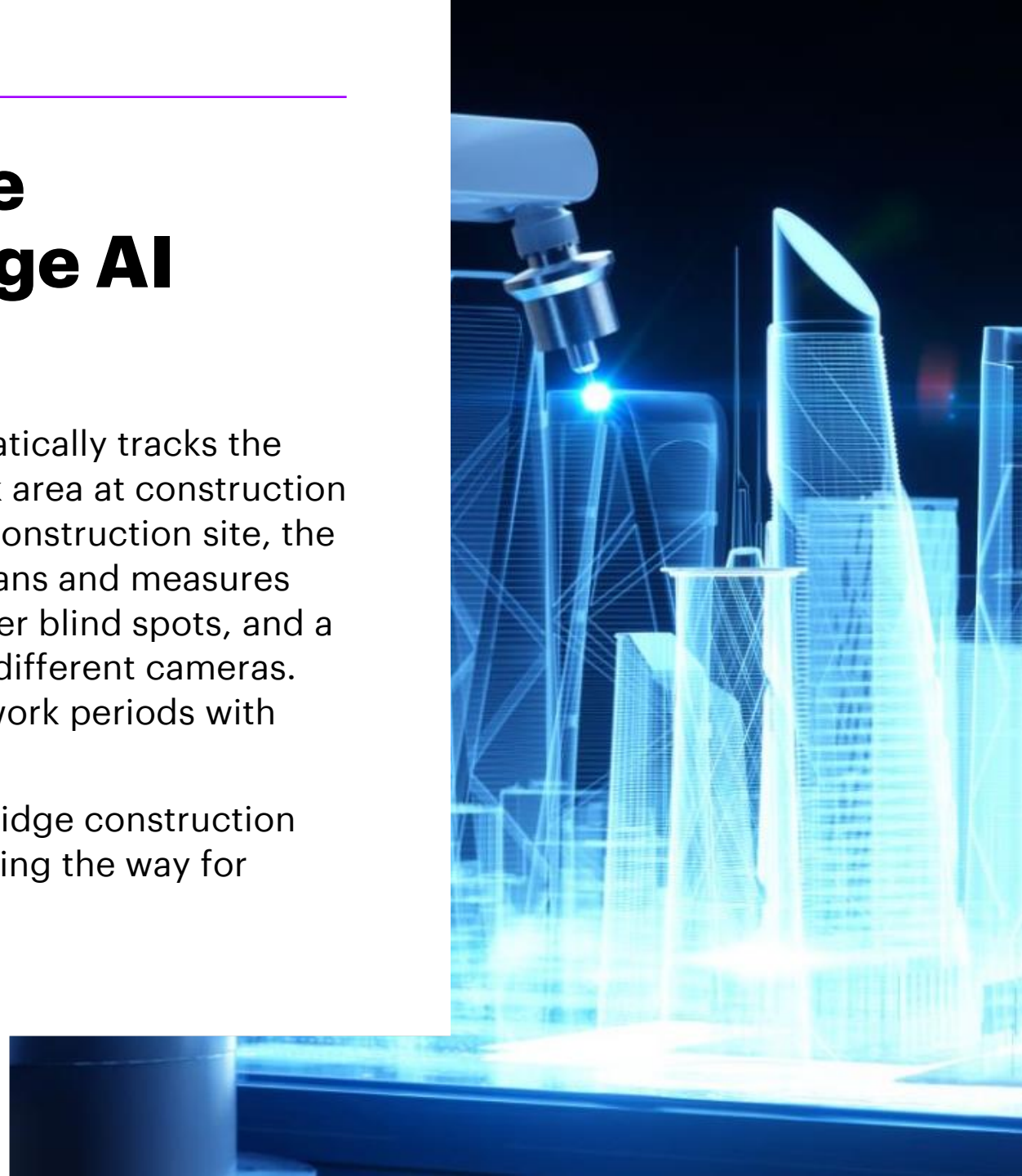
China's high-speed rail network is the largest and fastest in the world and is expected to continue rapid expansion and also increase the speed from 350km/h (217mph) to 400km/hr (249mph).

08

Efficient construction site monitoring: Kajima’s image AI solution

Kajima has developed an image AI system that automatically tracks the number of technicians and their work time in the work area at construction sites. By analyzing images from fixed cameras at the construction site, the system accurately determines the number of technicians and measures their total work time in minutes. Multiple cameras cover blind spots, and a unique algorithm identifies technicians appearing on different cameras. The system also calculates accurate steps by linking work periods with construction volume.

Kajima has successfully implemented the system at bridge construction site has demonstrated the system's effectiveness, paving the way for expansion to other project sites.



About The Industrialist

The Industrialist is our monthly digital publication that puts game-changing perspectives in the spotlight. It combines thought-provoking content and insights, to keep you on top of what's new in the industrial industry.

Featuring different CXOs and diverse leader views, you can be inspired by leading innovators, explore the latest trends, tools, technologies, and innovations, and ignite your industry interest with transformational thought leadership.

Discover how to lead the way and **Subscribe** today.

Visit us at **www.accenture.com/theindustrialist**

Disclaimer

This document makes reference to names, marks, and domains/websites owned by third parties. All such names, marks, and domains/websites are the property of their respective owners. No sponsorship, endorsement or approval of this content by the owners of such materials is intended, expressed or implied.