OPmobility at CES 2025

Embracing the future of mobility thanks to Artificial Intelligence & High technology

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A world leader and tech partner for all mobilities, OPmobility is at CES 2025 in Las Vegas to present its cutting-edge solutions for a more sustainable, safer and smarter mobility

In a market which is rapidly transforming, OPmobility is building on its industrial success to reach new heights and develop solutions that address mobility's many challenges. Because innovation has always been at the heart of its DNA, the Group is accelerating to consolidate its competitive advantage by combining all innovations that can respond to the challenges of mobility.

At CES 2025, OPmobility presents a new "all-in-one" offering for exterior vehicle systems. **One4you**, which combines the Group's four areas of expertise (body parts, lighting, modules and software), will create more added value and provide customizable solutions that will meet the needs of our partners, enabling the simplification of their industrial processes.

OPmobility also presents its **powertrain solutions** (combustion engines with depollution systems, hybrid, battery or hydrogen-powered electric vehicles) for all types of mobility as well as hybridization solutions for internal combustion engines and hydrogen-powered vehicles.

Two years ago, at CES 2023, OPmobility announced the creation of **OP'nSoft**, OPmobility's dedicated software development entity for its products and services. OP'nSoft is also attending CES 2025 to present its new and innovative **Digital Twin** which simulates with AI embedded features the development of its battery and hydrogen management systems, along with its new partnership with **WedoLow**, whose solution optimizes software performance and efficiency.

Last but not least, OPmobility demonstrates how Artificial Intelligence (AI) is already key to its development. In collaboration with start-ups including **Dessia, Neural Concept** and **Innodura**, the Group is using AI to drive innovation forward in four specific areas: product design, the transformation of development processes, operational excellence and predictive maintenance.

The innovations presented this year are testament to the Group's accelerating transformation to provide its customers with innovative solutions and added value.

OPmobility launches **One4you**, its new global offer for exterior vehicle systems

At CES 2025, OPmobility is presenting a new global offer for exterior systems: **One4you**. OPmobility is one of the few partners of automotive manufacturers to offer such an innovative solution. One4you provides "all-in-one" solutions that combine the Group's expertise in:

01 | Exterior body systems

02 | Lighting

03 | Modules

04 | OP'nSoft, the Group's dedicated software development entity for its products and services

One4you provides manufacturers with custom-made integrated solutions with significant added value.
Customers will receive increased support and will be able to better respond to the challenges of a rapidly changing market. OPmobility's One4you offer effectively addresses the issues of design, modularity, execution speed, operational efficiency and agility.

This has multiple benefits for our customers:

+

Faster and simpler production processes, speeding up the design and marketing phases of new models and optimizing costs. This also applies to the launch of new models that integrate new features, including software.

+

Greater design freedom and greater capacity for innovation. With OPmobility's expertise in the development and production of bumpers and lighting, the Group can provide its customers with integrated systems that are new, distinctive and custom-made.

+

Greater modularity and improved parts complementarity. As an example of this, OPmobility can develop and produce entire front-end systems, integrating bumpers, lighting and modules in a wide range of variations, tailored to the customer's needs and requirements.

The Software Defined Vehicle (SDV) is at the heart of the current mobility revolution and OP'nSoft is dedicated to meeting the challenges it presents. Not only does OP'nSoft work to expand the number of the Group's features made available to customers, it also creates new combinations and ways of working as part of One4you.

OPmobility presents its innovative products for **Exterior, Lighting and Modules**

Among the solutions presented by OPmobility's **Exterior** Business Group, visitors are able to take a closer look at exterior body systems integrating fiber optic panels and screens featuring hundreds of micro-LEDs. These developments open up new aesthetic possibilities, offering a wide range of design options and opportunities for differentiation, and strengthen communication between vehicles, improving road user safety.

World premiere Digital front system

Our pioneering Digital Front System seamlessly integrates a cutting-edge, curved mini-LED display.

Digital Rear Systems

Our pioneering Digital Rear System seamlessly integrates a mini-LED display.

Combined with advanced control electronics, these solutions unlock unlimited design possibilities for unique stylings as well as car communication for a safer journey.

Specialists from the **Lighting** Business Group introduce visitors to a fascinating area of expertise: Smart lighting. Beyond its initial function, lighting now plays a growing role in new-generation vehicles. New lighting systems blend seamlessly into the vehicle's design, signal their presence and communicate with other road users. They also adapt to the features of the road and the environment and can project on the road the upcoming curvature bending or other safety message.

Ultra Slim DRL (Day running Light)

This concept combines minimal thickness, high efficiency, and flexibility in 3D shapes, utilizing standard automotive LED light sources and materials. The uniqueness of this design lies in its completely smooth mate front surface, ensuring an elegant appearance without compromising functionality.

High efficiency Eco Light

High-Efficiency EcoLight is an innovative lighting module designed for maximum efficiency and cost-effectiveness. With single-optics technology and minimal number of components, it delivers optimal performance in all lighting scenarios. Its compact design ensures adaptability to modern vehicle needs while offering unmatched energy savings and sustainability.

The **Modules** Business Group also showcases visitors how OPmobility gives cars a "face" with its latest generation Front-end Modules. Indeed, thanks to its technical mastery of the development, assembly and logistics of complex modules, we can simplify our customers' production processes. Modules can be produced in tens of thousands of versions, depending on the customer's requirements.

Front-end Module

Front-end Module is a multi-piece assembly that consists of a structural carrier that integrates hood latch, engine cooling, headlamps, bumper beam, bumper fascia, wiring harnesses, AGS, Radar, Airbag sensors at any combination.
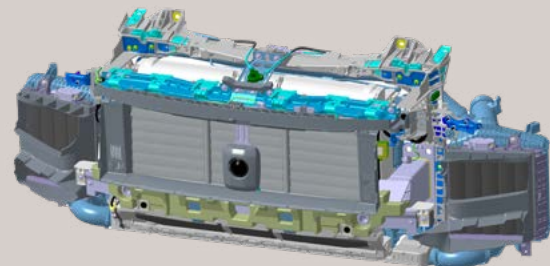
OPmobility showcases its **powertrain architecture solutions**

Decarbonizing mobility will require the use of several different technologies, provided by OPmobility's **C-Power** and **H2-Power** Business Groups, depending on local needs and markets and an understanding of how best to combine them.

At CES in Las Vegas, OPmobility presents its **powertrain solutions** (combustion engines with depollution systems, combustion and electric hybrid systems, battery-electric or hydrogen-powered) for all types of mobility, as well as **hybridization solutions** for internal combustion engines and hydrogen-powered vehicles. These solutions are designed for both passenger cars and heavy-duty vehicles (trucks, buses, trains).

Indeed, boasting unique technological expertise and a wide variety of proven technical solutions, OPmobility has developed a wide range of hybrid architectures that combine not only combustion and electric batteries, but also other more innovative combinations, including hydrogen and batteries, hydrogen and gasoline and hydrogen and diesel.

Technologies are further strengthened when combined, compensating for any limitations. In this way, OPmobility is broadening the potential scope of technology to drive sustainable mobility forward.
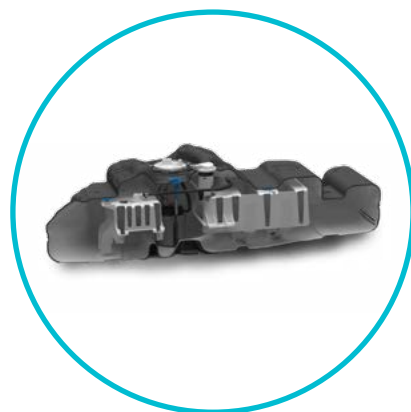

Pressureless fuel tank

Our innovative Pressureless fuel tank system limits pressure variations, solves purge issue, and reduces fuel waves, while providing significant cost savings over pressurized systems.


First composite 3D printing lightweight high energy pack

OPmobility is unveiling a world premiere at CES Las Vegas 2025, showcasing a lightweight composite 3D fiber printed battery casing. With up to 50% weight savings, 30% CO2 reduction, and 10% cost savings, this new battery frame technology helps improve battery efficiency and lifespan, additionally providing 10% more electric range for BEV users.
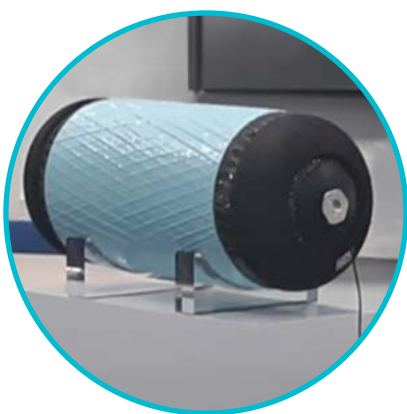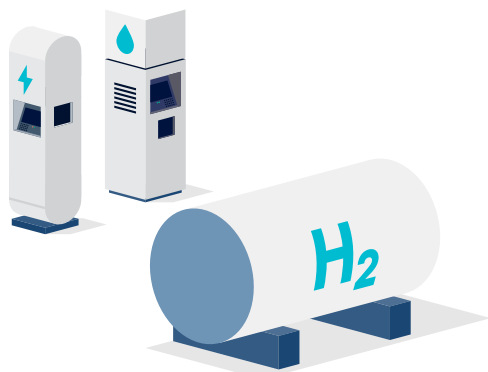
H2 HPV Tank digital passport

An innovation by OPmobility to improve the durability, sustainability, and ensure performance of the tank during the overall life of a high-pressure tank in real usage. On-board or off-board system to monitor the ageing of the tank during different phases: tank manufacturing, usage on a vehicle (normal / abnormal situation), and end-of-life.
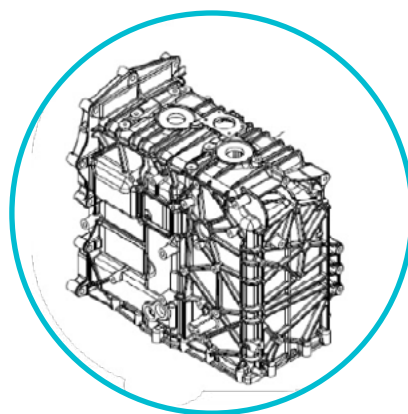
New NMi Fuel cell stack for automotive

Our best-in-class performance fuel cell stack exhibits an increase in power density, exceeding 8.7 kW/L and 7.2 kW/kg at the cell row assembly. The NMi fuel cell stack represents a new generation of technology with a 40% increase in power density compared to the previous generation.

OP'nSoft innovates with **Digital Twin**, a software service to improve the sustainability and efficiency of electric battery and hydrogen fuel cell systems
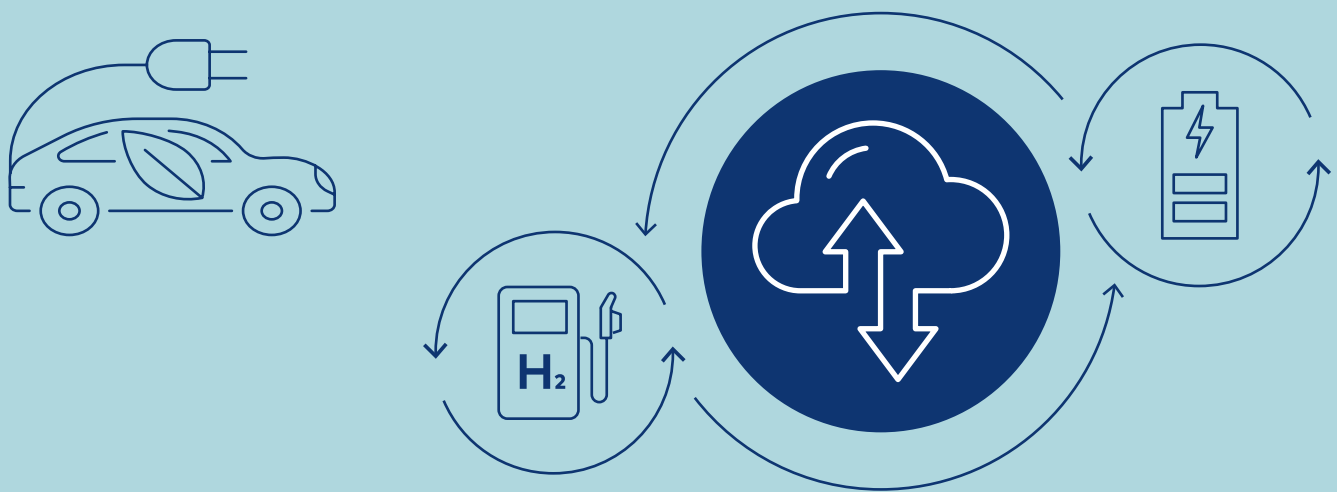
At CES 2025, **OP'nSoft**, OPmobility's dedicated software development entity which enhances its products and services, presents its **Digital Twin** software service to improve the sustainability and efficiency of electric battery and hydrogen fuel cell systems.

OPmobility's Digital Twin provides a virtual simulation of a electric vehicle's battery or hydrogen fuel cell system. Using large quantities of **data** and **Artificial Intelligence,** this Digital Twin service is a more effective tool for predicting the evolution of technology and supporting its lifespan.

Using advanced data collection, real-time monitoring and predictive analysis, this solution enables industrial customers and vehicle fleet operators to optimize the performance of electric battery and hydrogen fuel cell systems and extend their lifespan.

All this with a single objective: constantly improving the efficiency of sustainable mobility and facilitating the widespread adoption of these technologies through increased technology uptime, reduced costs and greater sustainability.

OP'nSoft presents its partnership with **WedoLow** for software development optimization

OP'nSoft, OPmobility's dedicated software entity, and its partner **WedoLow**, which specializes in optimizing the performance and efficiency of on-board and hosted applications, have joined forces to provide OPmobility's automotive and mobility customers with the best solutions to improve the performance of on-board software. These solutions optimize **software energy consumption, memory usage and software execution time**.

The development of on-board computer systems and software in increasingly high-tech "Software-Defined-Vehicles" (SDV) complexifies communications between vehicles' various components and runs the risk of saturation. It is estimated that every car in 2025 will contain 650 million lines of code.

When presented with software, WedoLow's solution connects to the software's source code and analyzes various key performance criteria. It provides a precise diagnosis of the code and quantifies its potential for optimization. The developer can easily choose the relevant optimization options and launch the automatic optimization process, before downloading the optimized code.

This reduces software energy consumption by up to 50%, frees up some 30% of memory and optimizes the execution time of software applications by 40%. As such, the solution allows to provide more features, improve cybersecurity and considerably increase response times, without the need for an update.
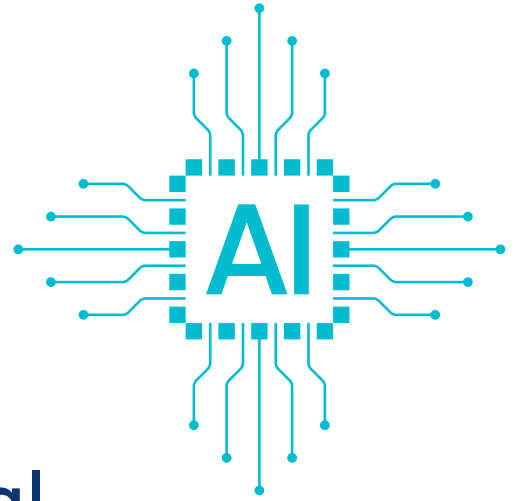
OPmobility puts **Artificial Intelligence** at the heart of its development by working with the start-ups Neural Concept, Dessia and Innodura

At CES in Las Vegas, OPmobility demonstrates how Artificial Intelligence is already key to its development. In partnership with start-ups including **Dessia, Neural Concept** and **Innodura**, the Group is using AI to drive innovation forward in four specific areas: **product design, the transformation of development processes, operational excellence and predictive maintenance**.

The strategic partnership with **Dessia**, specialized in the automation of engineering processes, centers on the design process behind the Group's products and solutions. By optimizing engineering processes with a cutting-edge and innovative software solution powered by AI, the design phase is optimized, errors are reduced and the best design is selected more quickly.

OPmobility's partnership with **Neural Concept** has provided its teams with a platform which boosts product development and innovation thanks to 3D Deep-Learning and simulation capabilities. This partnership has enabled OPmobility to improve the optimization of its products and development processes using collaborative tools. This reduces design times and improves the performance of the products provided to the Group's customers.

OPmobility is also working with **Innodura**, specialized in test benches and computer vision, on an AI quality control system. Custom AI models are developed in-house by OPmobility to enhance product quality at the end of the production line. This system uses deep learning techniques to detect objects and anomalies in real time, which reduces defective parts and customer returns.
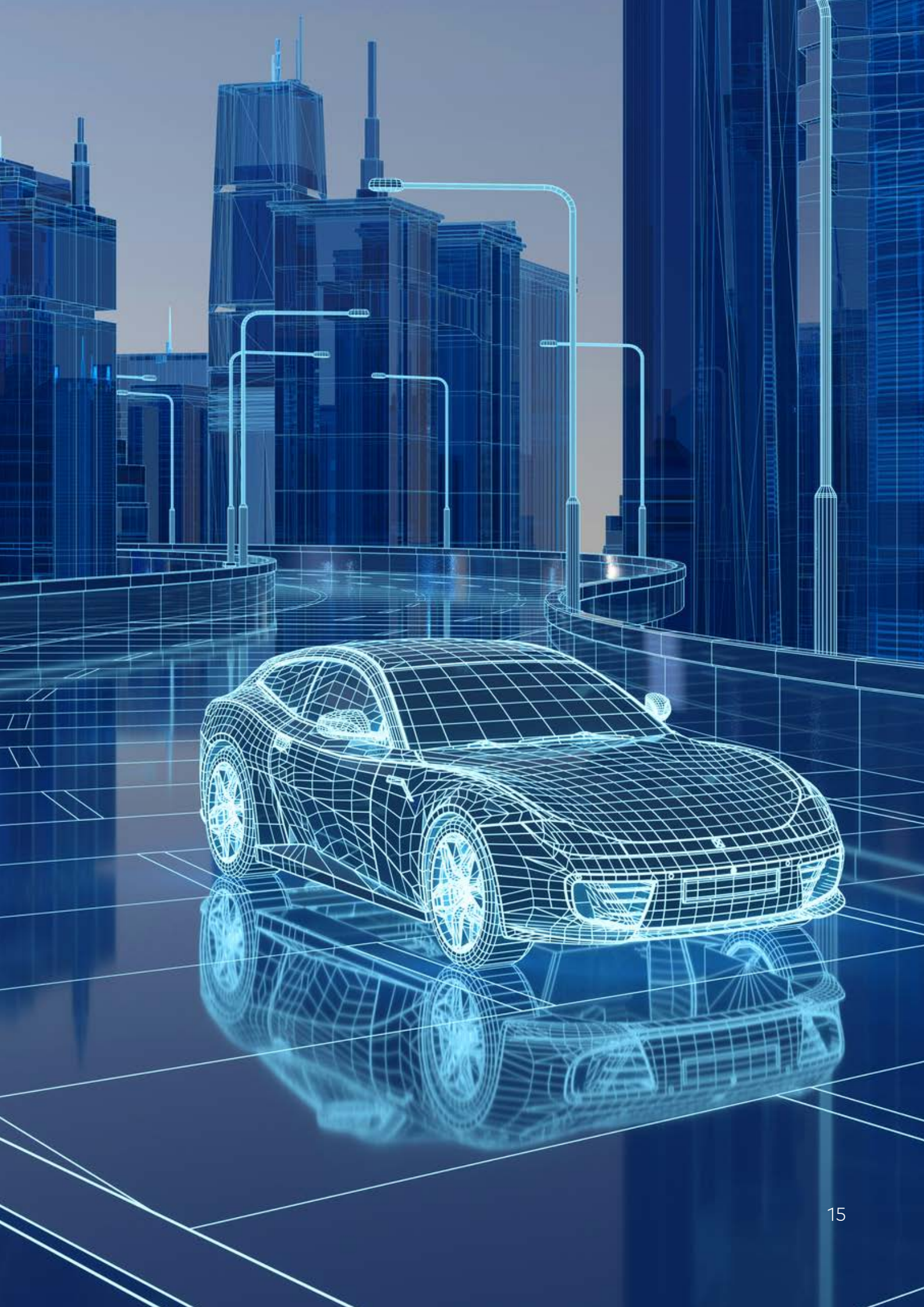
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