



Press Release

From the “smartphone on wheels” to competition for revitalizing the industry: the future of mobility according to Teoresi

- *Cars are increasingly software-driven and similar to smartphones: connected platforms that take care of the driver thanks to assisted and cooperative driving systems, new in-vehicle services, biometric monitoring, and drowsiness prevention.*
- *Connectivity is the pathway to autonomous driving: driverless cars navigate using sensors and edge-computing systems that digitally reconstruct the surrounding environment, and AI to react to obstacles. They communicate with each other and with infrastructure (V2X) through 5G and 6G technologies, exchanging real-time data to enhance safety and improve traffic flow.*
- *Composite materials, modular batteries, and hydrogen fuel cells are redefining the sustainable vehicle, while drones and mobile charging stations extend innovation to logistics and urban air mobility.*
- *The most innovative trends and the strategies for strengthening competitiveness in the automotive sector that emerged during RE:MOBILITY, the event organized by Teoresi Group at the National Automobile Museum.*

The mobility of the future will be **electric, connected, and software-driven**: 92% of companies in the sector consider the transition toward a “software company”¹ model inevitable, a transformation that will also redefine vehicle design. If, until just a few years ago, innovation was rooted in mechanics, today the heart of the car is digital, and vehicles can contain more than 100 million lines of code, more than those found in an airplane or a jet². Similar to a “**smartphone on wheels**,” the car is a platform capable of updating its functions remotely, activating new services, personalizing the driving experience, and monitoring those on board. **The evolution toward the software-defined car** introduces assisted and cooperative driving systems, biometric monitoring, drowsiness prevention, and cybersecurity solutions.

¹ [Capgemini Research Institute](#)

² [U.S. Government Accountability Office, Vehicle Cybersecurity](#)

Connectivity remains the bridge toward autonomous driving and smart cities; composite materials, modular batteries, and hydrogen fuel cells make vehicles lighter and more sustainable; drones and battery-swapping technologies extend innovation to urban logistics.

In this increasingly integrated ecosystem, **coopetition** (competitors working together) and collaboration between companies and research centers become the key to strengthening the Italian and European automotive supply chain and accelerating the sector's technological development.

The most innovative developments in mobility, along with the strategies and solutions for the technological and sustainable transition of the Italian and European automotive supply chain, took center stage at **RE:MOBILITY**, the event organized by [Teoresi Group](#), an international engineering company that supports businesses with cutting-edge technology projects, held at the National Automobile Museum in Turin. Throughout the day, discussions with major car makers explored the future of the automotive industry, as well as air mobility and the new frontiers of urban transportation.

"Mobility is shifting from a product to a flexible service suited to every need. Connectivity, automation, and personalization are the three pillars on which the future of automotive will be built: the most advanced technologies are transforming vehicles into true digital hubs, capable of offering an experience that goes beyond driving alone. Today, the car communicates with other vehicles, with the surrounding infrastructure, and with the applications in its car store, processing data to make onboard services increasingly advanced," says **Natale Gentile, Group Account Automotive at Teoresi Group**. *"The event at Mauto was an opportunity to engage with car makers and other players in the supply chain on the sector's major developments. Over the years, Teoresi Group has developed the ability to compete in this landscape by working on frontier technologies, from artificial intelligence to 6G networks, within national and international projects where it plays a leading role alongside institutional partners in Italy and across Europe."*

Software-defined cars and new onboard services, moving toward vehicles that take care of the driver - Electrification and connectivity are transforming the automobile into a software-defined car, a vehicle in which functions and services are managed and updated primarily through software. From real-time traffic and weather forecasts to in-car payments

and the projection of maps and information on the dashboard, the vehicle's operating system enables personalized services that make driving safer and more intuitive.

Teoresi Group has been working for years on frontier technologies that allow cars to "see" and "sense" through sensors and intelligent systems. These include **assisted-driving** features such as **automatic emergency braking** and **lane-keeping**, as well as early applications of **autonomous** and **cooperative driving** based on **5G and 6G connectivity**. To all this, we can add solutions designed to improve safety standards and prevent accidents through data exchange between vehicles and infrastructure: **biometric measurements**, driving-style monitoring, and early drowsiness detection allow the vehicle to take care of the driver, anticipating risky situations and adapting the onboard experience to their physical condition. Completing the ecosystem, Teoresi works on **cybersecurity solutions** to protect the connected vehicle from potential cyberattacks, ensuring the safety of both data and people.

Developing connectivity for autonomous driving - Only by enabling continuous communication between vehicles, infrastructure, and services can the car become part of an intelligent urban ecosystem. In this scenario, Teoresi is at the forefront with projects that combine technological experimentation and public-private collaboration: among these is **ENVELOPE³** which tests, in real-world conditions, the potential of 5G and future 6G technologies applied to autonomous driving. Specifically, **Teoresi has developed a prototype autonomous electric city car** that integrates LiDAR sensors, HD cameras, radar, and GPS, processing large volumes of data in real time to communicate with other vehicles and with road infrastructure.

The vehicle developed by Teoresi is able to recognize a pedestrian crossing, slow down or stop autonomously, and safely manage a left turn. **5G, 6G**, and **edge-computing** technologies make it possible to process data in real time, anticipate risky situations, transmit warning signals, and improve safety. This network of connections paves the way for a **cooperative mobility** model in which vehicles not only move safely without a driver but also share information useful for regulating traffic, energy consumption, and emissions. Together with its partners, Teoresi presented in Spoke 7 of

³ Below are the partners involved in the project: Fondazione LINKS, CTENext, Comune di Torino, TIM, Hewlett Packard Enterprise, Nextworks, Ertico, InCites Consulting, Isfm, Iquadrat, Vicomtech, Tno, Kpn, Siemens, Ude, Lenovo, Commsignia, Iccs, Demokritos, Isi, [OTE Group of Companies](#), [Fogus](#), [eBOS](#).

MOST – the National Centre for Sustainable Mobility a demo focused on vehicles in the event of an accident: the cars alert other road users to the issue and also coordinate traffic lights.

Increasingly sustainable vehicles, from composite materials for manufacturing to hydrogen for power - The same logic of integration is driving the evolution toward sustainable vehicles, starting from design and the selection of raw materials, areas in which Teoresi is carrying out research and development projects within the **National Centre for Sustainable Mobility (MOST)**. **New composite materials** and fast-curing resins, capable of reducing weight by up to 50% compared to steel, improve the efficiency of electric vehicles and increase their range. **For urban deliveries**, researchers are developing **prototypes of hydrogen-powered commercial vehicles** capable of reducing consumption through surrounding-traffic perception, data exchange with infrastructure, and regenerative suspensions. At the same time, **hydrogen fuel cells** and **mobile charging stations**, together with battery-swapping solutions, help reduce refueling times and promote a cleaner, more widespread energy model.

The coopetition strategy to restore centrality to the Italian and European automotive supply chain - Amid electrification and digitalization, the European and Italian automotive industry is undergoing one of its most profound transformations. To remain competitive, a paradigm shift is needed, one based on **coopetition**: the collaboration between competitors to share skills, technologies, and infrastructure along the supply chain. In an increasingly interdependent market, **cooperation among major manufacturers, SMEs, and startups** makes it possible to accelerate the transition toward connected and sustainable vehicles, while enhancing Europe's industrial know-how. This approach makes it possible to **integrate mechanical, electronic, and digital expertise**, strengthen innovation capacity, and **scale key technologies** such as batteries and onboard software.

Beyond cars: trains, drones, and the mobility ecosystem of the smart city - Teoresi develops cutting-edge technologies not only for automotive but for the entire smart-city ecosystem: cars, trains, drones, and aircraft share data and infrastructure, helping make cities smarter. In the railway sector, the Group designs and validates control and monitoring systems such as the **Train Control Monitoring System (TCMS)**, as well as **signaling** solutions to improve safety and reliability, integrating trains into urban digital networks. The expertise developed in automotive is also

being transferred to **advanced air mobility**, with drones for goods delivery and infrastructure monitoring, all the way to the use of **Digital Twins** to test hydrogen propulsion in aircraft. The goal is to develop **interoperable solutions** based on advanced sensors, artificial intelligence, and 5G/6G connectivity, creating platforms capable of enabling communication across air, rail, and road.

Teoresi Group

Teoresi was founded in Turin in 1987 as an IT consulting company. Today Teoresi Group is an international engineering organization operating in four countries (Italy, Germany, the United States, Switzerland) with a total of 27 offices, including 15 in Italy such as Turin, Milan, Modena, Rome and Naples. It supports companies in the creation of projects using the most advanced technologies, from autonomous driving to AI applied to medical diagnostics. With global engineering expertise, Teoresi Group offers design, development and technology consulting services with close attention to the innovative aspects of every project challenge, supporting clients from analysis to the conception of the final product, from the initial idea to the prototype, and from the prototype to the market. Starting in 2023 the Group's growth has also taken place through external lines: in January 2023 the acquisition of two Italian companies was announced, HiFuture specialized in hardware and firmware and BindingFuture specialized in web, app and cloud applications. Both companies underwent important rebranding processes in 2024 to further integrate their competencies into the Group and strengthen Teoresi's positioning in their respective sectors. In October of the same year the products of the Milan-based company IoT Solutions, specialized in smart building technologies and solutions to improve workplace comfort, optimize building management and reduce energy consumption, were integrated into the Group. In 2024 Teoresi also launched its MedTech division, the result of the Group's investments in the healthcare vertical and the 2023 acquisition of the Bologna-based company MediCon Ingegneria.

Teoresi Press Office

Marco Puelli | +39 320 1144691 | marco@agenziapressplay.it

Claudia Oliva | +39 3474386511 | claudia.oliva@agenziapressplay.it

Diana Avendaño Grassini | +39 338 1313854 | diana.avendanograssini@agenziapressplay.it