

PRESS RELEASE

THE MOBILITY OF TOMORROW: SMART AND CONNECTED

ASTM GROUP AND VOLKSWAGEN GROUP ITALIA PRESENT THE VEHICLE-INFRASTRUCTURE DIRECT DIALOGUE INITIATIVE

FOR THE FIRST TIME IN ITALY INTERCONNECTION BETWEEN PRODUCTION CAR AND MOTORWAY IN OPEN TRAFFIC CONDITIONS

- **A VOLKSWAGEN GOLF USED ON THE A4 TORINO-MILANO STRETCH**
- **ASTM WILL INVEST IN INTELLIGENT SYSTEMS: IN 2030 THE A4 TORINO-MILANO COULD BE AMONG THE SMARTEST AND MOST SUSTAINABLE MOTORWAYS IN EUROPE**
- **EMBEDDED SOFTWARE ON VOLKSWAGEN GROUP CARS IS A PREREQUISITE FOR THE CONNECTED AND, IN THE FUTURE, AUTONOMOUS CAR**
- **PWC ESTIMATES THAT 100% OF CARS IN THE EUROPEAN UNION WILL BE CONNECTED BY 2025**

Milan, 17 November 2021. What will the motorway of the future look like? Certainly sustainable, smart and connected, capable of dialoguing with transiting vehicles and the upcoming self-driving cars, to make us travel safer and exchange information in real time.

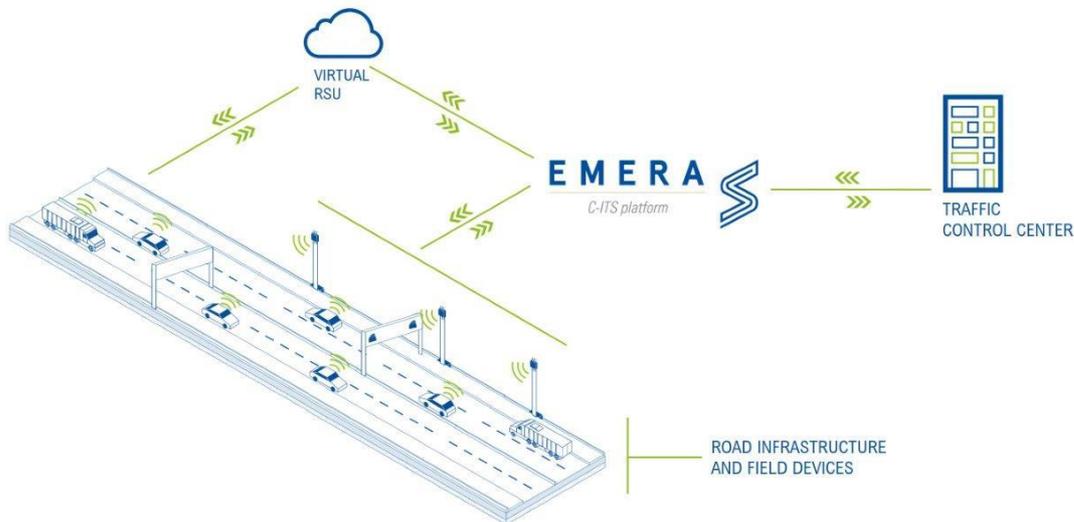
This is what was announced today during the event organised in the PwC Tower by ASTM Group and Volkswagen Group Italia which, thanks to a Golf with Car2X embedded technology, tested “smart mobility” on the Arluno-Rho section of the A4 Torino-Milano motorway.

The digital transformation, which is evolving our roads and motorways towards a new connected and smart mobility, was at the centre of the of the debate between Paolo Guglielminetti, Partner PwC Italia Global Railways & Roads Leader, Massimo Nordio, Vice President Group Government Relations and Public Affairs di Volkswagen Group for Italy, Andrea Nicolini, CEO of SINELEC e Umberto Tosoni, CEO of the ASTM Group.

The new smart mobility project on the Arluno-Rho section of the A4 Torino-Milano stretch is based on the Emeras software platform developed by SINELEC, the technology company of ASTM Group. The platform ensures the integration with the on-road Intelligent Transportation Systems (ITS) and enables the real-time bi-directional interconnection between vehicles and infrastructures. Technologies are evolving from intelligent systems to “cooperative” systems where the cooperation between vehicles and infrastructure delivers better quality services (for safety, comfort, and reducing congestions), increases the level of supervision of the vehicle's surroundings and becomes a technological enabler for a future based on autonomous driving.

Motorway operators and drivers will have the possibility to exchange real-time information to maximise travels reducing accidents, congestion and polluting emissions. Emeras collects and combines information

on the existing scenario and, taking into account the risk factors, immediately activates the response plan by disseminating geo-located messages.



What allows the car to communicate directly with the infrastructure is the presence of the Car2X embedded technology, available on various Volkswagen Group models. A significant technological goal, that allows the car to be able to dialogue with the surrounding environment without an external onboard unit. The Car2X communication covers an 800-metre radius in a few milliseconds and uses the principle of collective intelligence: this means that it will progressively improve as the number of vehicles that utilises it increases, thereby progressively maximising road safety.

“Cars are more and more a device on wheels and increasingly connected to each other, to the infrastructure and to the surrounding environment. Potential benefits in terms of safety, sustainability and user experience are evident as well as the crucial role of the software” said Massimo Nordio, Vice President Group Government Relations and Public Affairs. “The Volkswagen Group's transformation path is heading in this direction, with major investments - €27 billion by 2025 -, the integration of specific skills - with CARIAD, the Group's software company - and the development of technological platforms, which will lead to the creation of a unified operating system. By 2030, up to 40 million of our vehicles will operate on the Volkswagen Group's software stack. But in order to speed up the creation of the connected mobility ecosystem and, in a next step, of the autonomous mobility ecosystem, teamwork between all the players involved is essential: car makers, technology companies, infrastructure operators, institutions and research centres” added Nordio.

PwC Italia's analysis of future scenarios shows how smart mobility solutions and autonomous driving will respond to drivers' new needs and the growing demand for sustainability: greater travel intensity, fewer systematic home-school/work trips, more intermodal travel, expansion of shared mobility and greater digitalisation.

PwC estimates that by 2025 100% of the cars in the European Union will be connected and in 2030 foresees in Europe 20 million self-driving cars of which 2.8 million just in Italy, assuming a similar trend to the rest of the continent. The development of smart mobility is primarily influenced by infrastructures, which will be

transformed to interact with vehicles in real time, dynamically manage information from vehicles and traffic flows, and ensure safety for travellers.

During the event, ASTM Group announced its projects for the modernisation, technological innovation and ecological transition of the A4 Torino-Milano motorway. A first part of these works will be carried out by 2024 on the Milano-Novara pilot section, and then, upon authorisation by the MIMS, they will be extended to the whole motorway. By 2030, we will see, among other initiatives, the extension of vehicle-infrastructure communication systems (V2I), an increase in the sensor monitoring system for infrastructures, the introduction of smart gates with a "free flow" toll system, anti-fog systems, the use of 70% recycled asphalt for deep layers and graphene asphalt for the pavement, systems for detecting wrong-way drivers and for detecting dangerous goods, the introduction of hydrogen fuel stations and a greater presence of electric charging stations.

The CEO of ASTM, Umberto Tosoni, commented: "The technological innovation project of the A4 Torino-Milano presented today takes the motorway into a new dimension, making it one of the most modern and advanced in Europe. Investment in advanced technologies and ASTM's continuous commitment to finding sustainable, pioneering solutions are integrated in the Group's long-term strategy which aims for increasingly modern, safe, and sustainable motorways. We want to play a leading role in the digital transformation and ecological transition of our infrastructures with the goal of continuing to improve the travel experience and quality of service for our customers".

ASTM Group is a world leader in the management of motorway networks and in the design and construction of large infrastructural works. Present in over 15 countries and with approximately 16,000 employees, the Group's activities are focused on three main areas: management of motorway infrastructures (concessions), design and construction of major works (EPC - Engineering, Procurement and Construction) and technology applied to transport mobility. In the area of concessions, the Group is the second largest operator in the world in the management of motorway infrastructures with a network of approximately 5,500 km of network, of which more than 1,400 km in Italy, around 4,000 km in Brazil through the company EcoRodovias and 84 km in the United Kingdom through participation in Road Link. In 2020 ASTM Group reported the following consolidated results: €2.0 billion of Revenues, €548 million of EBITDA and Net profit of €109 million with a Net Financial Indebtedness of €849 billion.

SINELEC is the technology company of the ASTM Group, which gathers together the technological expertise of the Group in the fields of Electronic Tolling, Intelligent Transportation Systems. The company specialises in the research, design, implementation and maintenance of technological solutions for the optimised and safe management of traffic and transport infrastructures. Committed to contributing to the creation of a sustainable mobility model, SINELEC is actively involved in the process of digitising transport infrastructure. Today SINELEC solutions are the basis of almost 900 toll collection lanes and process about 500 million transits yearly for over €3 billion in economic transactions.

VOLKSWAGEN GROUP ITALIA S.P.A. is the Italian Subsidiary of the Volkswagen Group and distributes motor vehicles and spare parts of the Volkswagen, Volkswagen Commercial Vehicles, ŠKODA, SEAT, CUPRA and Audi brands. Founded in 1954 by Gerhard Richard Gumpert under the name Autogerma S.p.A., over the years the company has established itself as a major player on the automotive scene, achieving prestigious results that place it among the top 25 companies in Italy in terms of revenue. VOLKSWAGEN GROUP ITALIA S.P.A. sold more than 225,000 vehicles in 2020, a 16.3% market share, and approximately 9,400 commercial vehicles delivered, 6.1% of the market, in the same year. The company employs about 870 people.

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