PRESS RELEASE

WORLD FIRST: A SOLUTION TO REDUCE AIR POLLUTION TESTED BY TRANSDEV, TALLANO TECHNOLOGIES AND IVECO BUS

- **Transdev, Tallano Technologies and IVECO BUS** present a solution for recovering fine particles generated by bus braking systems.
- **Studies and tests of this anti-pollution device** are underway, with a view to real-life testing in the fall of 2024.
- **European legislation provides** a framework for environmental standards for combustion engine emissions. Between now and 2030, it will be supplemented by a section on "non-exhaust" particulate emissions, i.e. those coming from braking systems in particular. The innovation developed and tested by Transdev, Tallano Technologies and IVECO BUS aims to offer a solution that will meet these future requirements.

Issy-les-Moulineaux, April 30, 2024 - Transdev, Tallano Technologies and IVECO BUS are joining forces to test TAMIC®[1], a system for recovering fine particles emitted during bus braking. Full-scale tests will start in the second half of 2024 on an urban transport network operated by Transdev.

Initially tested on three IVECO BUS city buses, this technology for recovering fine-particle pollutants will be deployed on 50 IVECO BUS buses during the trial. Analyses will thus be carried out on a large scale in a real-life situation.

Developed by Tallano Technologies after many years of research and development, the TAMIC® technological solution is entering a new phase in its adaptation to intensive use on heavy public transport vehicles.

Protected by a portfolio of some fifty patents, filed in over 10 countries, the technology enables the capture of over 70% of the fine particle pollution emitted by the friction of brake pads on bus brake discs. On average, every year, a city bus with an internal combustion engine generates around 4kg of braking particles which, without appropriate devices, end up in the atmosphere and on the ground.

The system works in four stages:

- Suction: thanks to a groove created in the brake pad.
- Retention: over 70% of fine and ultra-fine particles are captured.
- Particle filtration.
- Recycling of collected particles.

According to ADEME[2] [French Agency for Ecological Transition], while exhaust pollutant emissions from combustion engines have decreased with the widespread use of particle filters, those from brake abrasion (but also from tires and road surfaces) are becoming increasingly preponderant.

Following the establishment of environmental regulations to limit pollutant emissions from combustion engine vehicles, by 2030 Europe will have introduced a new set of standards for fine and ultrafine particles emitted "outside the exhaust". In fact, the latter can be harmful to public health. And, from an environmental point of view, rainwater, by washing away asphalt surfaces in urban areas, drains into sewage systems water laden with rubber micro-particles and metallic, chlorinated and sulphureous elements originating in particular from the abrasion of brakes, tires and road surfaces.

The innovation project led by Transdev, Tallano Technologies and IVECO BUS, in addition to being part of a shared desire to make transport cleaner and more virtuous from an ecological point of view, also makes it

[1] TAMIC®: **T**echnologie d'**A**spiration des **MIC**ro-particules de freins = Brake Particle Aspiration Technology
[2] https://presse.ademe.fr/2022/04/plus-de-la-moitie-des-particules-fines-emises-par-les-vehicules-routiers-recents-ne-proviennent-plus-de-lechappement.html

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possible to anticipate the introduction of new European regulatory requirements applicable to public transport vehicles, buses and coaches.

The tests organized in 2024, representing an international first, will pave the way for new stages, such as approval of the pollution control system when the standards are defined, and industrial development of the solution. Indeed, the braking particle capture system based on Tallano's technology, and implemented by Transdev and IVECO BUS, is ideally suited to both new vehicles and the retrofitting of existing buses.

About IVECO BUS:
IVECO BUS is a brand of Iveco Group N.V. (EXM: IVG), a world leader in commercial and special vehicles, powertrains and financial services, listed on the Milan Stock Exchange. With a worldwide presence and a leading position in Europe for sustainable public transport, IVECO BUS supports public transport authorities and private transport companies in all their missions, with a global mobility solutions offer available in different energies: electric or compressed natural gas compatible with biomethane. The global offer includes:
- standard and articulated buses and their HQPT versions; urban midibuses ;
- school, intercity, route and tourist coaches;
- DAILY minibuses,
- connectivity and fleet management services available via IVECO ON
- a portfolio of products and services with Energy Mobility Solutions, ranging from simulations and design to the supply of charging stations, including installation and maintenance of the charging infrastructure.

The extensive network of IVECO BUS and IVECO service points guarantees assistance wherever a vehicle is in operation. The manufacturer employs over 5,000 people and has five plants, located in Annonay and Rorthais in France, Vysoké Myto in the Czech Republic, and Brescia and Foggia in Italy. For more information on IVECO BUS, visit: www.ivecobus.com. For more information on Iveco Group, visit : www.ivecogroup.com

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About Tallano Technologies:
Since its creation in 2012, Tallano Technologies has been pursuing a major ambition: to reduce air pollution linked to the emission of fine particles from braking systems. Each braking action causes the emission of fine particles (PM10 and PM2.5), loaded with carbon and heavy metals, which remain suspended in the air breathed by users. These particles are harmful to health and the environment. Tallano Technologies is a pioneer in the field of fine particle emission reduction systems for the braking of road vehicles (cars, buses and trucks) and rail vehicles (trains, metros, streetcars, etc.). Tallano has developed the generic TAMIC® system (acronym for Technology for the Aspiration of Micro-particles from Brakes), which can be integrated into both original equipment and retrofit systems. The TAMIC® solution captures fine particles at source, at the heart of the brake itself, preventing them from being dispersed into the air and inhaled. It is capable of capturing up to 85% of PM emitted during braking, regardless of whether the vehicle is individual or collective, light or heavy, thermal or electric. Its performance has been demonstrated in bench and road tests. The system's intelligence is protected by over 48 patents in 12 countries, making Tallano Technologies one of the key players in this sector, with one of the world's largest patent portfolios in this field. For more information: https://www.tallano-technologies.com

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About Transdev:

As an operator and global integrator of mobility, Transdev – The mobility company – empowers freedom to move everyday thanks to safe, reliable and innovative solutions that serve the common good. Following the acquisition of First Transit (March 2023), Transdev carries nearly 10 million passengers daily, thanks to its various efficient and environmentally friendly modes of transport and employs more than 100,000 women and men serving its passengers, thus consolidating its position as world leader in public transportation. Transdev is jointly held by Caisse des Dépôts Group (66%) and the Rethmann Group (34%). In 2022, present in 19 countries, the Group generated total revenues of €7.7 billion. For more information: **www.transdev.com**

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