



## Low particle Emissions and lOw Noise Tyres

Grant Agreement: 955387

8<sup>th</sup> GRBP TF VL , 4/4/2022

# LEON-T overview: What



There is broad scientific consensus that exposure to airborne particulates and/or nocturnal noise leads to adverse health effects.

Particulate emissions and noise emissions generated by tyre-road interaction are suspected to contribute to such exposure for those living near busy roads.

Furthermore, tyre wear particles disperse from their generation at the road surface through the environment—in soil, water bodies and biota.

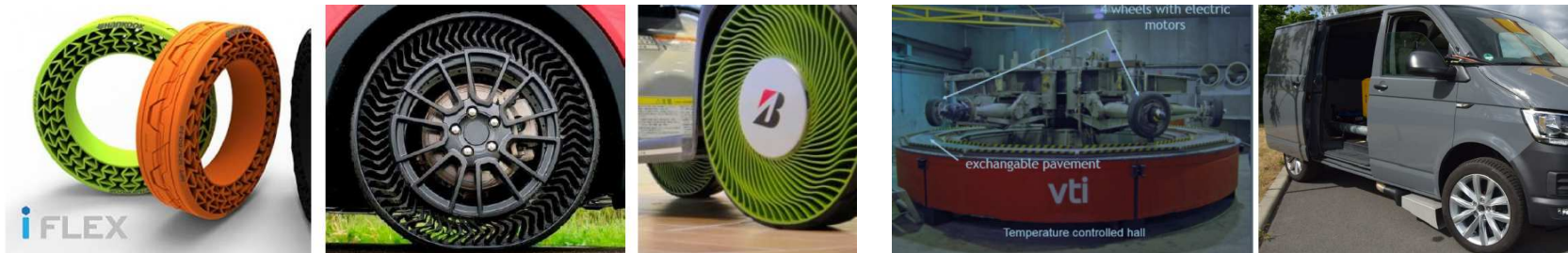
What is lacking is a body of evidence gathered through reproducible, standardised measurement methods allowing the introduction of justifiable, broadly supported legislative measures to limit particulate and noise emissions from tyres so as to reduce the risk they pose to public health and wellbeing.

# LEON-T overview: Motivation

LEON-T will significantly increase the knowledge and evidence about particle and noise emissions from tyres and their associated effect on public health, in order propose mitigating measures through regulation, labelling and tyre design:

- *Correlate particle emissions lab and road tests*
- *Standardization of test setup for tyre abrasion rate measurement*
- *Environmental dispersion of tyre-generated microplastics*
- *Health effects of exposure to tyre-generated noise*
- *Low noise, low rolling resistance truck tyre*
- *Mitigating policy measures*

Collaborative project with **AUDI, FORD, JRC, VTI, TNO, RIVM, UGOT, INSA, BAX, ETU** and **LLG**



# LEON-T overview: Project objectives

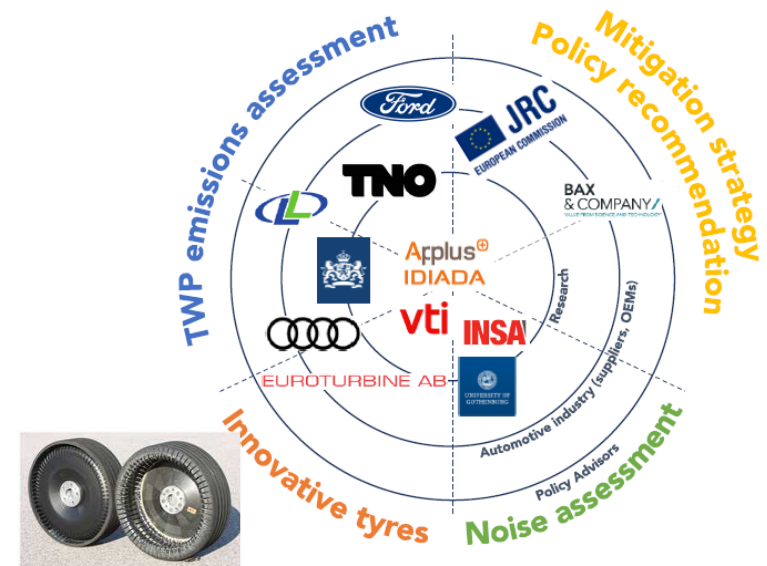
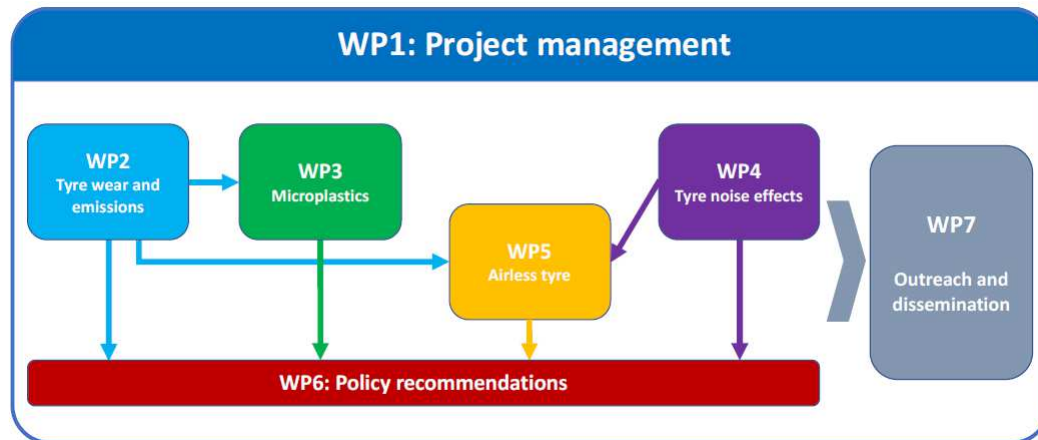


- Increase the knowledge about the measurement of particle and noise emissions from tyres and their associated effects on public health
- Propose effective and efficient mitigating measures through regulation, labeling and tyre design
- Correlate particle particle abrasion and particle emissions in lab and road tests
- Proposal and validation of an in-vehicle test set-up for the determination of tyre abrasion rate, suitable for consumer-oriented labelling
- Investigation of the health effects of exposure to tyre generated noise
- Design and construction of a low noise, low rolling resistance tyre
- Recommendation of policy measures to limit the contribution of tyre-road interaction to microplastics in the environment, to airborne particles exposure and to traffic noise.

# LEON-T overview: Collaboration scheme

LEON-T will be executed by a consortium representing all significant stakeholders:

- Car and tyre manufacturers: **FORD, AUDI, LLG**
- Applied research organisations – Tyre/road interaction: **IDIADA, TNO, VTI, JRC**
- Scientific research organisations – Health aspects (Noise & particles): **RIVM, INSA-Lyon, UGOT**
- SME: **ETU, BAX**



# LEON-T overview: Collaboration scheme. The WPs



- **WP1 (IDIADA) : Administration and Project Management**
- **WP2 (FORD) : Tyre wear and emissions:** Identify, measure, characterize and compare, through lab and on-road experiments, the particle emissions from both Light-duty and Heavy-duty vehicles.
- **WP3 (RIVM) : Microplastics:** Quantification and tracing of tyre wear particles in different environmental compartments, i.e., air
- **WP4 (UGOT) : Tyre noise effects:** Influence of tyre noise characteristics on the risk for human cardiovascular disease
- **WP5 (VTI) : Design and Construction of an airless-tyre:** Develop and validate and innovative HGV airless tyre concept with prototypes
- **WP6 (JRC) : Policy recommendation:** Synthesise the knowledge gained during the project activities into potential new policies and regulations
- **WP7 (INSA-Lyon) : Outreach and dissemination:** Communicating the LEON-T activities, methodologies and outcomes towards external stakeholders, policy makers and general audience.
- **WP8 (IDIADA) : Ethics requirements**

# Timing

WP	WP Title	Leader	Start Month	End Month
WP1	Project Management	IDIADA	1	36
WP2	Tyre wear and emissions	FORD	1	30
WP3	Microplastics	RIVM	1	30
WP4	Tyre noise effects	UGOT	1	29
WP5	Airless tyre	VTI	4	36
WP6	Policy recommendations	JRC	25	26
WP7	Outreach & dissemination	INSA-Lyon	1	36

Start: June 2021 – Finish May 2024

LEON-T

Thank you