2024

EUCAR PROJECT BOOK

eucar

EUROPEAN COUNCIL FOR AUTOMOTIVE R&D

The automotive industry is in the midst of a massive societal transformation towards climate neutrality and digitization. We have a unique opportunity to shape the future of transportation in a way that benefits everyone. A sustainable society demands resource and energy-efficient goods, including their production and transportation processes.

In this context, logistics and commercial road transport play a crucial role in achieving our sustainability goals. Commercial vehicles serve a wide range of functions for the transportation of people and goods. Many essential services for society are delivered by trucks, buses, and vans.

In the future, the increased demand for renewable energy from all sectors, including industry, housing, etc., will impact the Total Cost of Ownership (TCO) for transportation. Regulatory requirements, energy provision, and infrastructure availability should facilitate early adoption until net-zero operation becomes cost-competitive. A diversified powertrain setup for propulsion is needed to accommodate the specific operational needs (urban, regional, long-haul).

In collaboration with manufacturers, logistic operators, and infrastructure providers, we aim to optimize the use of digitalization and infrastructure to promote safe and efficient road transport. We will demonstrate and validate all functional aspects and associated effects in real-life conditions through large-scale road transport demonstrators.

EUCAR members are driving the development of innovative transport and mobility technologies and services, while transitioning towards a circular economy and ensuring the industry's competitiveness. In doing so, we are strengthening Europe's competitiveness and resilience through collaborative research and innovation across the strategic value chains in road transport.

As the 2024 Chair of EUCAR, the European Council for Automotive R&D, I am pleased to reaffirm our commitment: we will work with our European partners to develop solutions that will be adopted globally and invest in strategic value chains for road transport.

We strongly believe that by working together, we can create a future where transportation is sustainable, safe, clean, and efficient for all.

Sincerely,

Riccardo Romanini

CHAIR OF EUCAR
DIRECTOR, VEHICLE CONFORMANCE,
IVECO GROUP

STRATEGIC AREAS

SUSTAINABLE MOBILITY

- EG Energy & Environment
- EG Electrified Powertrain
- EG Battery Technologies
- EG Fuel Cells & H2 Technologies
- EG Circular Economy

DIGITALISATION OF ROAD TRANSPORT

- EG Automated Vehicles
- EG Safety & Human Interaction
- EG HPC & Virtual Engineering
- TF Software-Defined Vehicles

COMMERCIAL VEHICLES

- EG Commercial Vehicles

SUMMARY

SUSTAINABLE MOBILITY

SUMMARY

DIGITALISATION ROAD TRANSPORT

SUMMARY

COMMERCIAL VEHICLES

THE EUCAR STRATEGIC VISION

SUSTAINABLE MOBILITY

We promote collaborative automotive R&I towards sustainable mobility, by means of energy and resource-efficient technologies.

We target carbon neutrality over the full life cycle, while addressing affordable total cost of ownership, and increasing circularity with a user-centric approach.

Our research and innovation actions aim at strengthening European sovereignty and resilience regarding technologies, materials and value chains.

Expert Group Energy & Environment

To further reduce GHG emissions towards decarbonisation, we will use renewable energy employing more diversified energy carriers while minimising the use of critical materials.
In parallel, we identify requirements to optimise energy system and infrastructure (recharging, grid integration and refuelling) while extending the well-to-wheel perspective towards a broader and more comprehensive life-cycle (LCA) view.

Expert Group Electrified Powertrain Systems

The sustainable future leads to a diversified carbon neutral propulsion portfolio over the vehicle life-cycle.

We therefore develop highly (energy and resources) efficient and globally competitive electrified propulsion systems, using todays and tomorrow's energy carriers.

Expert Group Battery Technologies

We are actively working to achieve advanced performance at battery cells and pack/system level to improve safety and vehicle integration.

We develop, and use, new materials and chemistries, aiming at reducing the costs, minimising the use of critical materials while substituting hazardous chemicals.

Expert Group Fuel Cell & H2 Technologies

We advance fuel cell and hydrogen storage systems to reduce costs, use of critical materials, as well as to enable mass production of components and systems.

Our R&I covers vehicle integration, increasing durability, robustness against contaminants, and substituting hazardous chemicals.

Expert Group Circular Economy

We work towards reducing/minimising the environmental impact and waste of our products along the value chain, by driving R&I collaboration with the material suppliers/producers, recycling and waste management industries.

We promote standardisation across sectors, defining harmonised performance indicators, using digitalisation and data to help our industry achieving this objective.

Our R&I actions address design for circularity and recycling processes, improving sustainability of components and materials, e.g. recover, reuse, refurbish, recycle.

BUDGET	€10.8 million
FUNDING	€10.8 million
START	January 2020
DURATION	42 months
CALL	H2020-LC-GV-2019
CONTRACT N°	874972
COORDINATOR	Boschidar Ganev AIT
CONTACT	office@ait.ac.at
PARTNERS	EUCAR members: Volvo Group Other: AIT, CRF-Stellantis, DSM, Insplorion, Valeo, CIC Energi GUNE, iSEA, CustomCells, Fraunhofer, NXP, Haldor Topsoe, ELKEM, ENEA, SensiChips, ABEE, CEA, Manz, Arkema.

www.3believe.eu

3BELIEVE

Delivering the 3b generation of LNMO cells for the xEV market of 2025 and beyond

⇒ MOTIVATION AND OBJECTIVES

The development of better materials for use in rechargeable batteries is vital for the future of the electric vehicle market. One of these materials is lithium nickel manganese oxide (LNMO), a cobalt-free cathode material that's a cost-effective alternative to current lithium-ion (Li-ion) battery materials. Using LNMO, the EU-funded 3beLiEVe project aims to produce the next generation of Li-ion rechargeable batteries for electric vehicles in 2025 and beyond. Along with the next-gen battery cells, the project will also develop and integrate internal and external sensors for the cell. Manufacturing, second life and recycling aspects are also considered. The project's innovations will play a role in strengthening the European battery and automotive industry.

⇒ EXPECTED IMPACT

- Development of automotive battery cells that are highly performant (target energy density 750wh/l, fast charge capability, long cycle life) and free of critical raw materials such as cobalt and natural graphite.
- Development and integration of sensors into and onto the cells to enable smart, adaptive operating strategies and advanced diagnostics in order to extend the useful life of the battery in first and second life applications and improve safety.
- A comprehensive manufacturing approach that is designed from the outset for a circular economy and industrial volumes. This encompasses green manufacturing processes for cell, module and pack, as well as recyclability assessment of the components, and a target lifecycle cost of 90 €/kWh at scale.

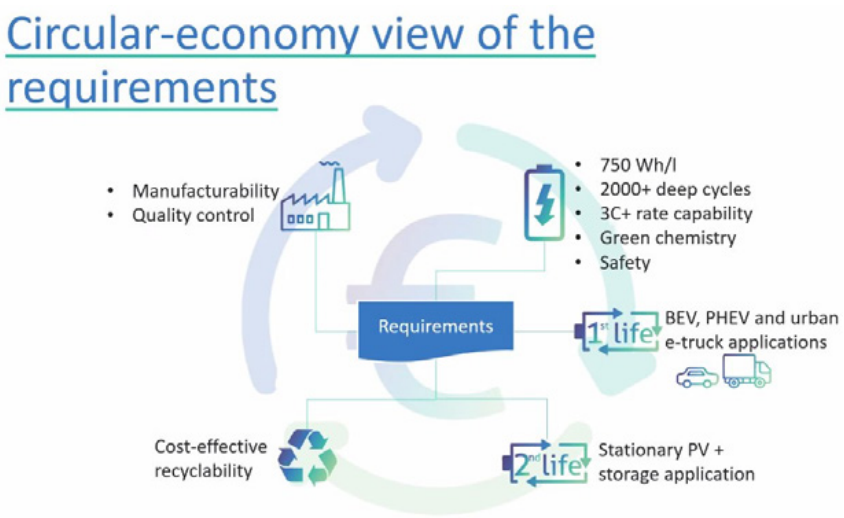
3BELIEVE

⇒ TECHNICAL APPROACH

3beLiEVe aims at delivering the 3b generation of LNMO cells for the electrified vehicles market of 2025 and beyond:

- 3b generation batteries with LNMO cathodes, LiFSI electrolyte, and a 10-20 wt.% Si-C anode in a cell architecture capable of 750 Wh/l, 300 Wh/kg, 1.4 kW/kg, and 2,000+ deep cycles, of which 10% at 3C+;
- a portfolio of internal and external sensors (22 sensors per module) and an adaptive liquid cooling system managed by a smart BMS with advanced diagnostic and operational functions;
- cradle to cradle approach, including cell/module/pack green manufacturing processes (gigafactory level), optical equipment for inline quality inspection, 1st and 2nd life performance and recyclability demonstration, achieving 90 €/kWh life cycle cost.

⇒ CIRCULAR ECONOMY REQUIREMENTS



3BELIEVE

⇒ ACHIEVEMENTS

The project will deliver 250 cells of generation 3b in total and two demonstrator battery packs of 88 cells and 12 kWh capacity each at TRL 6 / MRL 8. These aim at demonstrating the 3beLiEVe technology performance for applications in light duty (i.e. passenger cars, freight vehicles) and commercial vehicles (i.e. city buses and trucks) in fully electric/plug-in hybrid (BEV/PHEV) configurations. 3beLiEVe technology is free of critical raw materials (cobalt and natural graphite), scalable and sustainable, aiming at 12.7 GWh production by 2025 and 33.7 GWh in 2030, for a market ranging from 1.1 to 2.5 billion €/year, i.e. 7% of the global manufacturing capacity. All the technological domains and innovations addressed in 3beLiEVe are essential for strengthening the position of the European battery and automotive industry in the future market of xEVs.

BUDGET	€18.4 million
FUNDING	€14.4 million
START	June 2020
DURATION	48 months
CALL	H2020-LC-GV-2019
CONTRACT N°	875131
COORDINATOR	Angelos Amditis ICCS
CONTACT	a.amditis@iccs.gr
PARTNERS	EUCAR MEMBERS: BMW Group, Volvo Cars Other: ICCS, ABB, ABEE, BFS, Bosch, BSM, CEA, CRF-Stellantis, Serve, electromaps, ERTICO, Grenoble-Alpes, Hubject, ICOOR, IDIADA, Mosaic, Nexxtlab, Silence, POLIS, Polito Bari, Powerdale, evway, OTS, Simatrics, Swobbee, Uv Pisa, Uv Sussex, Verbund, VUB, ZorluEnerji.

www.echarge4drivers.eu

eCHARGE4DRIVERS

Aligning Research & Innovation for Connected and Automated Driving in Europe

⇒ MOTIVATION AND OBJECTIVES

As the popularity of electric vehicles (EV) grows, users' needs and expectations on charging solutions and services are increasing. The EU-funded eCharge4Drivers project will improve the user experience as regards available charging options and services.

⇒ EXPECTED IMPACT

eCHARGE4DRIVERS will develop and demonstrate user-friendly charging stations, smart services and charging solutions, including mobile charging and battery swapping stations. User-centric services such as route planning, booking, and charging location planning will be developed to further improve users' experience and foster e-mobility growth. The project's user-friendly charging systems and interoperable services will be demonstrated in 10 areas, covering cities, the Trans-European Transport Network and cross-border routes. The project will conclude with recommendations for legislative and regulatory amendments, as well as guidelines for the sustainability of charging infrastructure investments.

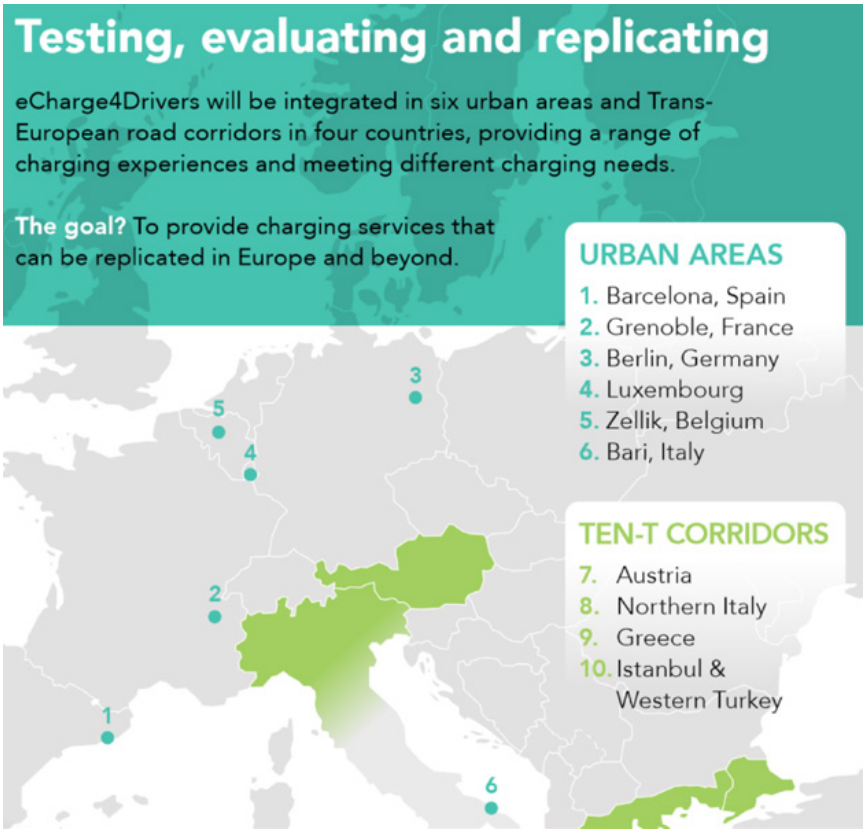
eCHARGE4DRIVERS

⇒ TECHNICAL APPROACH

- The work will start with wide surveys in 10 demonstration areas, to capture the a priori users' perceptions and expectations as regards the various charging options and their mobility and parking habits.
- Based on the survey findings and after matching with the perspective of authorities, operators and service providers, the project will develop and demonstrate in 10 areas, including metropolitan areas and TEN T corridors, easy-to-use, scalable and modular, high- and low-power charging stations, low-power DC charging stations and components with improved connection efficiency and standardised stations for LEVs.
- The project will demonstrate additional convenient charging options within cities, a mobile charging service, charge points at lamp posts and networks of battery swapping stations for LEVs.
- Using the knowledge generated, the project will propose an EV Charging Location Planning Tool to determine the optimum mix of charging options to cover the user needs, recommendations for legal and regulatory harmonisation and guidelines for investors and authorities for the sustainability of charging infrastructure and services.

eCHARGE4DRIVERS

⇒ DEMONSTRATION SITES



⇒ ACHIEVEMENTS

- An Electric Vehicle Charging Location Planning Tool to guarantee the optimum mix of charging options to cover users' needs.
- Recommendations for legal and regulatory harmonisation.
- Guidelines for investors and authorities for the sustainability of charging infrastructure and services.

BUDGET	€18.5 million
FUNDING	€15.0 million
START	January 2020
DURATION	48 months
CALL	H2020-LC-GV-2019
CONTRACT N°	875683
COORDINATOR	Renault Group
CONTACT	joseph.beretta@avere-france.org
PARTNERS	EUCAR members: FPT Industrial (IVECO), Renault Group Other: 30 partners including automotive suppliers, telecommunication companies, municipalities, research centres and universities.

www.incit-ev.eu

INCIT-EV

Large demonstration of user centric urban and long-range charging solutions to boost an engaging deployment of Electric Vehicles in Europe

⇒ MOTIVATION AND OBJECTIVES

Paving the way for electric vehicles requires an understanding of users' expectations and needs. This is one of the main aims of the INCIT-EV. The project will demonstrate different charging infrastructure technologies in five European cities and associated business models with the aim of improving the user experience. Bringing together 33 partners, the project aims to boost industry knowledge of users' unconscious preferences for charging options.

⇒ EXPECTED IMPACT

INCIT-EV aims to demonstrate an innovative set of charging infrastructures, technologies and its associated business models, ready to improve the EV users experience beyond early adopters, thus, fostering the EV market share in the EU.

INCIT-EV

⇒ TECHNICAL APPROACH

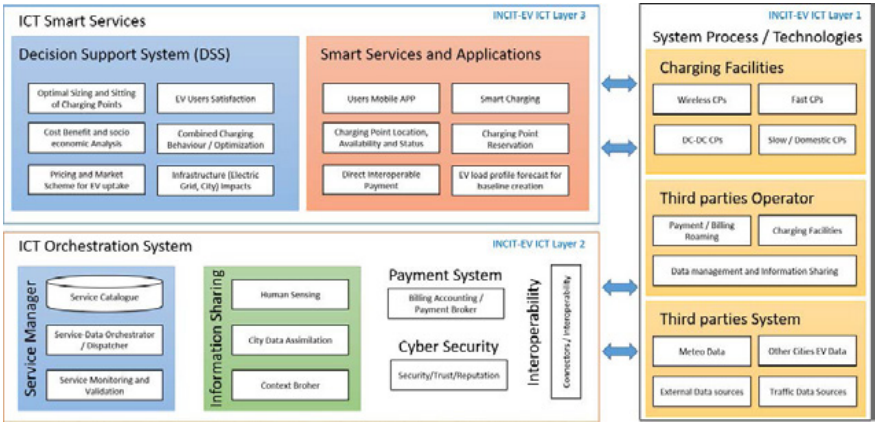
5 demo environments at urban, peri-urban and extra-urban conditions will be ready for the deployment of 7 use cases, addressing:

- Smart and bi-directional charging optimized at different aggregation levels
- Dynamic wireless charging lane in an urban area
- Dynamic wireless charging for long distance (e-road prototype for TEN-T corridors)
- Charging Hub in a park&ride facility
- Superfast charging systems for EU corridors
- Low power DC bidirectional charging infrastructure for EVs, including two-wheelers
- Opportunity wireless charging for taxi queue lanes in airports & central stations

These use cases pursue innovations in the current charging solutions as well as their seamless integration into the existing transport, grid, ICT and civil infrastructures. For this purpose, the INCIT-EV Platform will be developed comprising a DSS and a set of APPs addressing the users and e-mobility stakeholders' needs.

INCIT-EV

⇒ NEW GENERATION OF EV RECHARGING



⇒ ACHIEVEMENTS

INCIT-EV will engage 3,475 private EV drivers, as well as 10 local communities, 4 Taxis cooperatives, 4 car sharing and 4 LEVs sharing companies. In total, the project will mobilise directly an investment on the use cases of 8.872 M€.

LEON-T

BUDGET	€4.1 million
FUNDING	€4.0 million
START	June 2021
DURATION	36 months
CALL	LC-MG-1-14-2020
CONTRACT N°	955387
COORDINATOR	Juan Jesús García Applus IDIADA Group
CONTACT	juanjesus.garcia@idiada.com
PARTNERS	EUCAR members: AUDI AG (Volkswagen Group), FORD Werke Other: IDIADA, JRC, VTI, TNO, RIVM, GOETEBORG Uv, INSA Lyon, Bax Consulting, Euroturbine, SHANDONG LINGLONG TIRE.

www.leont-project.eu

LEON-T

Low particle emissions and low noise tyres

⇒ MOTIVATION AND OBJECTIVES

As car and truck engines have become quieter and cleaner over the past decades, particulate and noise emissions from road-tyre interaction have become the dominant source of traffic-generated particulate emission and traffic noise. Both particulates (airborne or as microplastics) and noise are suspected to contribute to negative health outcomes for those living near busy roads.

LEON-T will investigate both particulate and noise emissions from tyres, and in doing so define and propose practical standardised methods for both lab and road testing—of tyre abrasion rate (mostly larger particles) and airborne particulate emissions.

⇒ EXPECTED IMPACT

Assessment and understanding of potential effects of tyre noise on cardiovascular health. These will be investigated using waking tests and sleep studies. The insights gained in these investigations will be used to optimise the design, prototyping and demonstration of a novel airless tyre, which we expect will combine reduced noise, wear and emissions with high safety, reliability and comfort.

LEON-T will also contribute by proposing policy recommendations to mitigate against potential health hazards caused by tyre particulate and noise emissions.

LEON-T

⇒ TECHNICAL APPROACH

- Correlate particulate emissions lab and road tests by conducting tests to quantify and characterize tyre abrasion and particulate emissions both in the lab and on-road.
- Standardisation of test setup for tyre abrasion rate measurement suitable for consumer-oriented labelling of tyres.
- Parameterise the existing SimpleBox4Nano (SB4N) model on tyre-generated microplastics dispersion in the environment and validate this model through field measurements.
- Investigate the effects on cardiovascular health of exposure to (tyre-related) traffic noise for those living near busy extra-urban roads, taking into account psycho-acoustic qualities of the noise.
- Develop, prototype and test an airless truck tyre/wheel combination with a noise emissions reduction target of 6 dB(A) compared to current most popular truck tyre/wheel combinations.
- Recommend policy measures to limit the (potential) contribution of tyre-road interaction to microplastics in the environment, to airborne particulates exposure, and to traffic noise.

⇒ LEON-T COMPOSITE WHEEL OFFERING LOW NOISE AND ROLLING RESISTANCE

Sandberg, Ulf (2009), The Composite Wheel – An innovation featuring low tire/road noise and low rolling resistance simultaneously, Proc. of Inter-Noise 2009, Ottawa, Canada

LEON-T

⇒ EXPECTED ACHIEVEMENTS

- LEON-T seeks to make important contributions to the knowledge and evidence-base on tyre emissions—particulate and noise—that pose potential hazards to public health and well-being, in order to facilitate the introduction of legislation and other policy measures to reduce those hazards
- LEON-T will further advance particulate emissions sampling for both on-road vehicle testing and lab testing using representative road surfaces, in order to determine quantified emission factors and correlation factors, which would subsequently allow reproducible, simpler, and lower-cost lab tests to be used to determine representative particulate emissions profiles for different tyres under varied driving conditions.
- Investigate the relationship of night-time exposure to tyre-generated traffic noise varying in a number of noise parameters on objective biomarkers that have a proven association with negative cardiovascular health outcomes. Such studies on the effects of psychoacoustic parameters on health risk factors have not been done before.
- LEON-T will develop, validate and propose a practical standardised on-road test method of measuring tyre abrasion rate.
- The project will develop an HGV version of an airless tyre and wheel combination that has been demonstrated for passenger cars and holds the promise of a major reduction in noise and rolling resistance.

SAFE LiMOVE

BUDGET	€7.8 million
FUNDING	€7.8 million
START	January 2020
DURATION	36 months
CALL	LC-BAT-1-2019
CONTRACT N°	875189
COORDINATOR	Dr. María Martínez CIC energiGUNE
CONTACT	mmartinez@cicenergigune.com
PARTNERS	EUCAR members: Renault Group, Toyota Motor Europe Other: CIC energi GUNE, SCHOTT, Umicore, Hydro Quebec, SAFT, Ikerlan, CEA, CIDETEC, TU Berlin, iSEA, ABEE, LCE, Uniresearch

www.safelimove.eu

SAFELiMOVE

Advanced all solid state safe lithium metal technology towards vehicle electrification

⇒ MOTIVATION AND OBJECTIVES

Electric vehicles (EVs) play an important role in the bid to meet global goals on climate change. Although the market for EV batteries has seen consistently high growth rates over the past few years, currently the battery technology is dominated by players from Asian countries. The EU-funded SAFELiMOVE project intends to increase Europe's representation in this market by gathering key European actors in the battery sector, including industrial materials producers, battery manufacturer, R&D centres and the automotive industry. The project aims to develop a new lithium-metal battery cell technology based on a safe, reliable and high-performance solid-state electrolyte. Its high specific energy (450 Wh/kg), fast charging and long cycle life is expected to extend EV range, helping the transport sector to reduce greenhouse gas emissions.

SAFELiMOVE

⇒ EXPECTED IMPACT

More and more automotive manufacturers are introducing BEVs (battery electric vehicles) and PHEVs (plug-in hybrid electric vehicles) into the automotive market. However, the technological and commercial competitiveness of batteries is one of the main challenges that must be overcome if millions of EVs are to be launched in the near to mid-term. The main aim of the SAFELiMOVE-project is to meet the requirements of (future) BEV users like faster charging and longer battery cycle life. This will make possible to promote electromobility and will also have a direct impact on climate change scenarios.

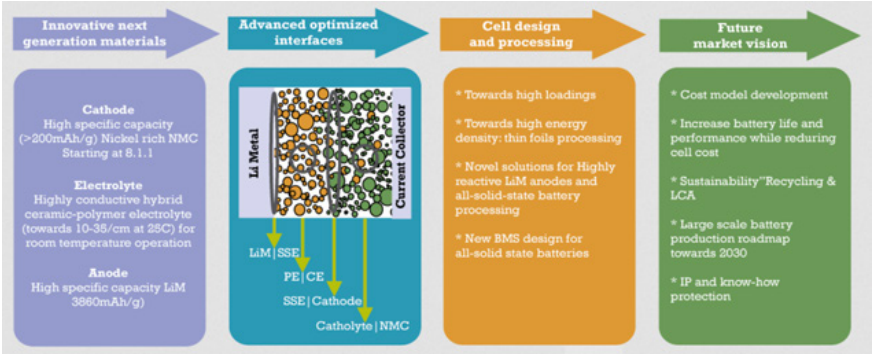
⇒ TECHNICAL APPROACH

SAFELiMOVE delivers innovations in five main technology areas:

- nickel-rich layered oxide cathode materials;
- high specific capacity Li-metal anode materials;
- advanced hybrid ceramic-polymer electrolyte with improved ion conductivity at room temperature;
- interface adoption for effective Li transport by surface modification and/or over-coatings;
- knowhow creation for the development of scale up production of all-solid-state batteries

SAFELiMOVE

⇒ SAFELIMOVE METHODOLOGY



⇒ ACHIEVEMENTS

The project will achieve the following results:

- Specifications and requirements for battery cells
- Advanced material set (anode/electrolyte/cathode)
- Materials processing (electrode, electrolyte) and small cell design
- Solid-solid Interface analysis
- Cell design development and 10 Ah cells prototyping
- Testing and aging at multi-cell level
- Industrialization perspective and Roadmap towards 2030
- Multiscale-Multiphysics battery modelling

solutions plus

BUDGET	€20.3 million
FUNDING	€18.0 million
START	January 2020
DURATION	36 months
CALL	LC-GV-05-2019
CONTRACT N°	875041
COORDINATOR	URBAN ELECTRIC MOBILITY INITIATIVE (UEMI)
CONTACT	secretariat@uemi.net
PARTNERS	EUCAR members: Volvo Group Other: 42 international partners from cities, industry, research, implementing organisations and finance partners.

www.solutionsplus.eu

SOLUTIONSplus

Aligning Research & Innovation for Connected and Automated Driving in Europe

⇒ MOTIVATION AND OBJECTIVES

The SOLUTIONSplus project aims to enable transformational change towards sustainable urban mobility through innovative and integrated electric mobility solutions. To deliver this objective the project will boost the availability of electric vehicles, foster the efficiency of operations and support the integration of different types of e-mobility in large urban areas and addressing user needs and local conditions in Europe, Asia, Africa and Latin America.

⇒ EXPECTED IMPACT

SOLUTIONSplus brings together highly committed cities, industry, research, implementing organisations and finance partners. Through numerous synergistic projects, networks and a strong technical experience, the project will be able to deliver its highly ambitious goals. Through the regional platforms, a global programme and local teams, the project aims to develop highly effective and innovative approaches to urban e-mobility ensuring that mobility systems and interventions from this project deliver on the Paris Agreement, meet the Sustainable Development Goals and address the New Urban Agenda.

⇒ TECHNICAL APPROACH

- Boost capabilities of local and national authorities, public transport operators and entrepreneurs about innovative urban e-mobility solutions across various transport modes by informing them about tools to plan, assess, implement and operate e-mobility solutions.

SOLUTIONSplus

- Strengthen policy and business collaboration by initiating partnerships between local and national governments and local and European entrepreneurs and supporting the development of new e-mobility models business implementation plans.
- Create reference models for e-mobility innovation by implementing demonstration actions to test innovative e-mobility technologies and services, foster their replication and ensure their long-term sustainability.
- Contribute to global sustainability and climate goals by boosting the impact of this project through the integration of the innovative concepts into policy, funding, operation, research and business practice.

⇒ PROJECT ACTIVITIES

⇒ ACHIEVEMENTS

- Set-up of the demonstration actions in: Hamburg, Madrid, Pasig, Quito, Montevideo, Hanoi, Dar es Salaam, Kigali, and Kathmandu.
- Definition of a scalable and harmonised toolbox for advanced implementation, management and operation strategies of efficient e-mobility solutions.

STREnGth_M

Stimulating road Transport Research in Europe and around the Globe for sustainable Mobility

BUDGET	€2.0 million
FUNDING	€2.0 million
START	February 2023
DURATION	36 months
CALL	HORIZON-CL5-2022-D5-01
CONTRACT N°	101096253
COORDINATOR	Verena Wagenhofer AVL LIST GMBH
CONTACT	verena.wagenhofer@avl.com
PARTNERS	EUCAR members: BMW Group, Volkswagen, Volvo Group Other: STELLANTIS, BOSCH, ERTICO, FEHRL, GRUBER, POLIS, RC, RWTH AACHEN, CIT, UEMI, TECHNIK, 4AUTOMOTIVE, UITP, ETSO, VALEO, University THESSALONIKI

www.ertrac.org/support-actions/strength_m

STREnGth_M

Stimulating road transport research in Europe and around the globe for sustainable mobility

⇒ MOTIVATION AND OBJECTIVES

The Coordination and Support Action STREnGth_M will contribute significantly to the planning of research and innovation in Europe by identifying future research needs in the field of road transport, by updating and supporting the coordination of strategic research agendas and roadmaps in the field and by facilitating continuous exchange between road transport research related Horizon Europe partnerships and platforms.

⇒ EXPECTED IMPACT

Supporting research and innovation in Europe by identifying future research needs in the field of road transport.
The project will further analyse research, innovation and cooperation capacities in Member States, explore funding instruments on national and regional level and assess potentials of national and regional roadmaps.
This will contribute to strengthen existing links between European, national and regional programmes and support structures for international cooperation task forces. The partners will also identify barriers that may exist for the deployment of research results on European and on international level and they will identify education and training actions to contribute to capacity building.

STREnGth_M

⇒ TECHNICAL APPROACH

STREnGth_M will track the global progress of electric mobility while measuring the feasibility of innovative solutions for prospective and emerging markets in Africa, Asia and Latin America.
In order to inform and engage the vast stakeholder community, policy makers, the civil society and more, the consortium will develop elaborate dissemination strategies, support the dissemination and organisation of European and international road transport research related events.
This way the dissemination of the contribution from road transport to the realization of the European Green Deal targets and the Paris Agreement can be ensured. Via the establishment of the so called Multiplier Group the engagement of the various stakeholders will be facilitated throughout the project.

BUDGET	€3.7 million
FUNDING	€3.7 million
START	January 2023
DURATION	30 months
CALL	HORIZON-CL5-2021-D5-01
CONTRACT N°	101056715
COORDINATOR	Thilo Bein, Fraunhofer LBF Juan Felipe Cerdas Marin, Fraunhofer IST
CONTACT	thilo.bein@lbf.fraunhofer.de felipe.cerdas@ist.fraunhofer.de
PARTNERS	EUCAR members: BMW Group, Renault Group, Scania and Volkswagen Group as beneficiaries; and DAF Trucks, Ford, HONDA R&D Europe, IVECO Group, Toyota ME and Volvo Group as associated. Other: Another 40 key stakeholders along the full value chain of zero-emission vehicles covering battery manufactures, suppliers, RTOs, energy providers and recyclers.

www.lca4transport.eu

TranSensus LCA

Towards a European-wide harmonised, transport specific LCA approach

⇒ MOTIVATION AND OBJECTIVES

TranSensus LCA aims to develop a baseline for a European-wide harmonised, commonly accepted and applied single life cycle assessment (LCA) approach for a zero-emission road transport system. Such a European single LCA approach is seen as a key element in achieving the Green Deal targets, making Europe the first digitally enabled circular, climate-neutral and sustainable economy.

⇒ EXPECTED IMPACT

Considering upcoming technologies leveraging emission reduction strategies, circular economy targets as well as potential social issues becomes increasingly challenging over the full life cycle of vehicles (design and development, production, use-phase and End-of-Life) and over the supply chain.
Within this context, a reliable, transparent, standardized assessment of the environmental footprint of different solutions and technologies is essential to support the transformation of our transport system towards climate-neutrality. TranSensus LCA will enable industry, mobility providers and planners to provide sustainable products and to optimise mobility solutions as needed to combat climate change.

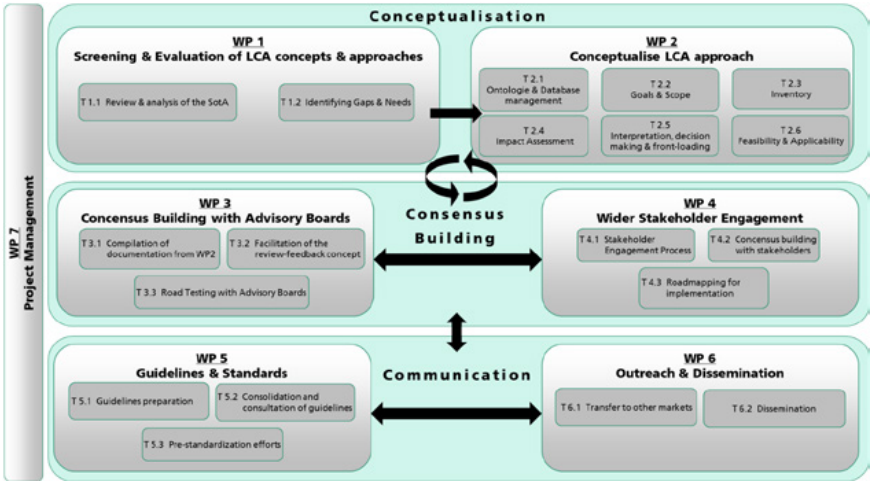
TranSensus LCA

⇒ TECHNICAL APPROACH

The main steps in the TranSensus LCA project include:

- Conceptualizing and demonstrating a European-wide real-data LCA approach for zero-emission road transport
- Harmonizing methodologies, tools, and datasets
- Elaborating an ontology and framework for a European-wide life cycle inventory (LCI) database
- Conceptualizing LCI data management and updating throughout the life cycle and supply chain
- Considering upcoming technologies and demands.

⇒ THE TRANSENSUS LCA PROJECT STRUCTURE



THE EUCAR STRATEGIC VISION

DIGITALISATION ROAD TRANSPORT

The new era of road transport digitalisation is changing design, architecture, and the development of vehicles to enable their seamless integration into the transport system and digital environment.

This will improve transport efficiency for people and goods while providing improved mobility for all. With a holistic understanding of road safety, digitalisation enables moving closer to zero fatalities in road transport by 2050.

Expert Group Automated Vehicles

A step-wise introduction of connected vehicles with progressively increased levels of automation will enable new mobility concepts, shifting design and development from driver-centred to mobilityuser-centred. This will further support the 2050 Vision Zero targets along the way while ensuring inclusive mobility and reducing transport emissions and congestion. We work to ensure safety in future mixed traffic with connected automated vehicles, conventional vehicles, and all other road users.

Expert Group Safety & Human Interactions

Achieving Vision Zero in road safety requires a higher commitment and increased knowledge of all safety aspects (vehicles, road users and infrastructure). This knowledge guides the safe-by-design principle, improving safety on each system level and at every development stage, from design to testing and validation. We improve our understanding of human behaviour to support the development and integration of innovative human-technology interaction, further reducing distractions and providing measures to regain attention to the driving task. Advanced active safety and driver assistant systems minimise risks by avoiding collisions or reducing the consequences of unavoidable crashes. For these, we advance passive safety systems protecting passengers and VRUs, and improve post-crash safety for users and first responders.

Expert Group HPC & Virtual Engineering

The increasing computing capabilities have an impact on all areas in the design, development, production and use of vehicles. The high-performance tools are used for modelling and simulation to identify substitute materials and or further reduce cost and time to market. This will reduce the dependency on critical resources, while increase the competitiveness of the automotive industry. We therefore develop and demonstrate robust integrated tools for simulating and optimizing material models, components, systems and vehicles, including in-use. They help increasing efficiency, affordability and support a sustainable operation.

Task Force Software-Defined Vehicles

Software is taking an increasingly important role in the operation and enabling new features in vehicles with increased connectivity and automation. With Software-Defined Vehicles (SDV) we focus at EUCAR on non-differentiating elements of the vehicle software stack in an open and pre-competitive collaboration. We aim at aligning with stakeholders and communities leading to an open development eco-system for standardised SW building blocks (with automotive grade) and interfaces as well as the development of SW development tools and validation toolsets.

Hi-Drive

BUDGET	€60.0 million
FUNDING	€30.0 million
START	July 2021
DURATION	48 months
CALL	DT-ART-06-2020
CONTRACT N°	101006664
COORDINATOR	Aria Etemad Volkswagen AG
CONTACT	aria.etemad@volkswagen.de
PARTNERS	EUCAR members: AUDI AG, BMW AG, FORD, HONDA R&D Eu, Hyundai Motor Europe, Renault Group, SEAT SA, Toyota Motor Europe, Volvo Cars and Volvo Group. Other partners: ZENSEACT, APTIV, BOSCH, FEV, NNG, PTV, VALEO, AAI, GETAG, DRL, TNO, VEDECOM, VTT, ICCS, RWTH, Chalmers, T U Delft, Leeds Uv, Genoa, Warwick Uv, WIVW, EICT, IRF, FIA, TÜV, PSA Group-Stellantis and BASt.

www.hi-drive.eu

HI-DRIVE

Addressing challenges toward the deployment of higher automation

⇒ MOTIVATION AND OBJECTIVES

Hi-Drive addresses a number of key challenges, which are currently hindering the progress of developments in vehicle automation. Our key aim is to advance the state of the art of Automated Driving (AD) technologies. We focus on testing, demonstrating, and evaluating robust high automation functions in a large set of traffic environments, not currently achievable:

- Complex interaction with other road users in normal traffic
- Connected and secure automation providing vehicles/their operators with information beyond the line of sight and on-board sensor capabilities
- Automated vehicles travelling in challenging conditions covering variable weather and traffic scenarios
- New information about user preferences and reactions including comfort and trust

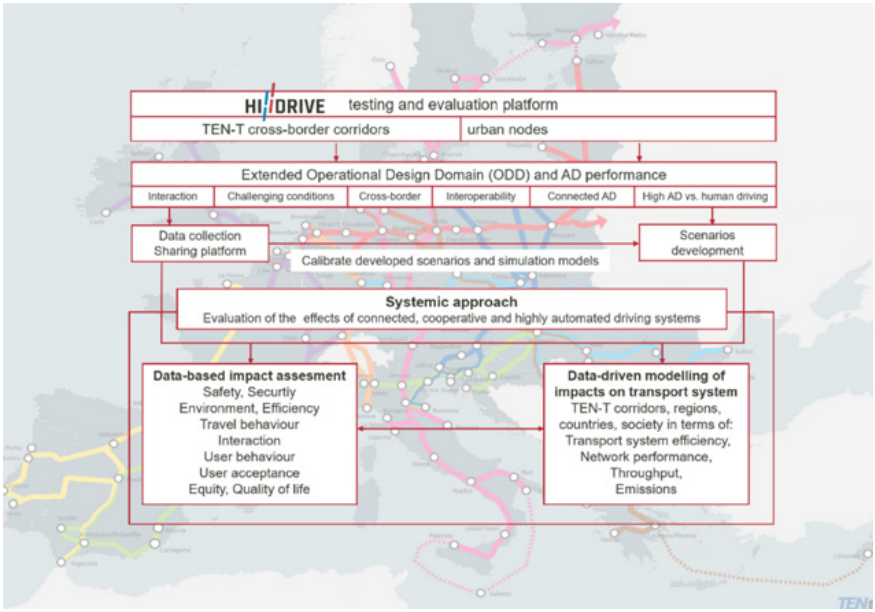
⇒ EXPECTED IMPACT

Building on the results of the EU-funded project L3Pilot, Hi-Drive extends the data collection across EU borders in variable traffic, weather, and visibility conditions. The vast geographical coverage of our test sites across Europe enables a more realistic scaling up of the results to an EU level.

As a result of the project activities, significant progress will be made in developing technologies for connected and automated driving in Europe paving the way for the deployment of these technologies.

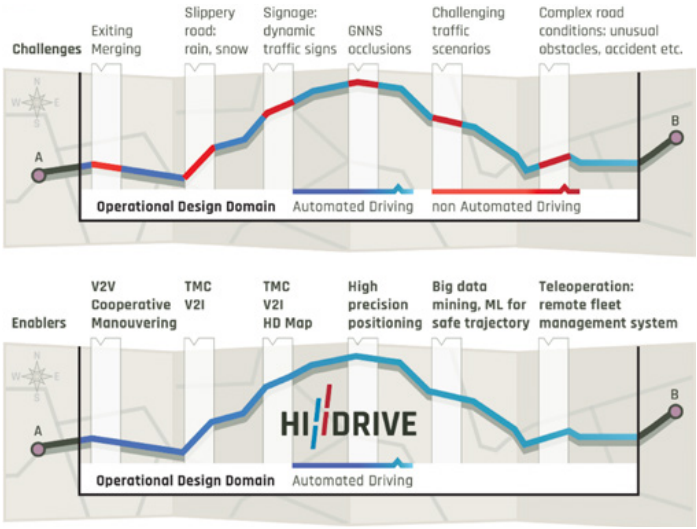
HI-DRIVE

⇒ TECHNICAL APPROACH



HI-DRIVE

⇒ HI-DRIVE CONCEPT TOWARDS HIGH AUTOMATION – LESS LIMITS FOR ODD



⇒ ACHIEVEMENTS

With the data collected from the tests, Hi-Drive will evaluate direct impacts of AD related to individual driver-vehicle behaviour, interaction with other road users, and vehicle behaviour. By means of micro- and macroscopic simulation, these impacts will be scaled up to a societal level.

The project will then consider the impacts of AD on transport system level performance indicators such as transport system efficiency, network performance, and the inclusion of those who do not currently have suitable access to mobility, such as senior citizens or the disabled. This development will be accompanied by the definition of quantified future scenarios, considering different factors that might affect the deployment of AD technology, users' reactions, mobility patterns, external influences and regulatory measures.

BUDGET	€10.2 million
FUNDING	€7.9 million
START	September 2018
DURATION	36 months
CALL	H2020-ART-2017
CONTRACT N°	768953
COORDINATOR	Dr. Angelos Amditis, Institute of Communication and Computer Systems
CONTACT	a.amditis@iccs.gr
PARTNERS	EUCAR members: BMW Group Other: ICCS, IBM, Nokia, WIND, T-Mobile, Bosch, SWM, AirBus, ASFINAG, ATE, UULM, SEAB, ISMB, ERTICO, COU, CDV, BRE, UFL, FIAT.

www.ict4cart.eu

ICT4CART

ICT Infrastructure for Connected and Automated Road Transport

⇒ MOTIVATION AND OBJECTIVES

The main goal of ICT4CART is to design, implement and test in real-life conditions a versatile ICT infrastructure that will enable the transition towards higher levels of automation (up to L4) addressing existing gaps and working with specific key ICT elements, namely hybrid connectivity, data management, cyber-security, data privacy and accurate localisation. ICT4CART builds on high-value use cases (urban and highway), which will be demonstrated and validated in real-life conditions at the test sites in Austria, Germany and Italy. Significant effort will be put also on cross-border interoperability, setting up a separate test site at the Italian-Austrian border.

⇒ EXPECTED IMPACT

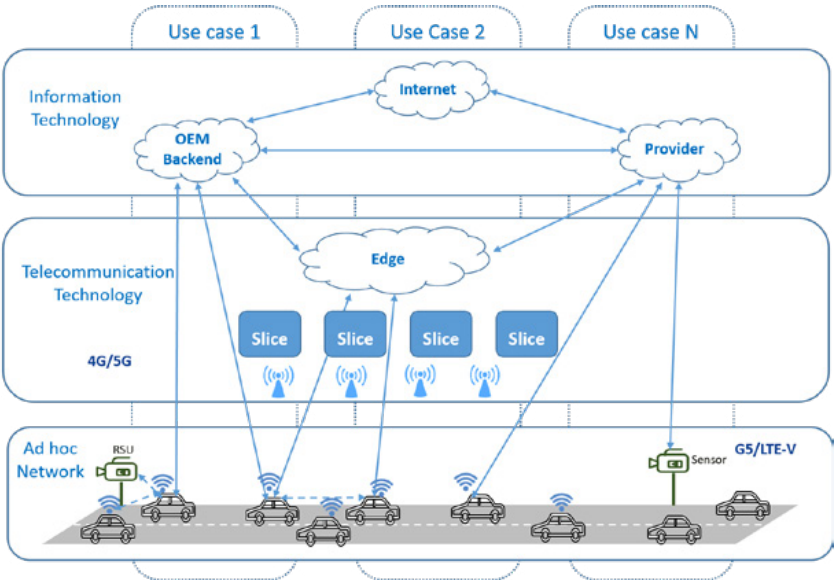
Through its ICT infrastructure architecture, integrating a hybrid communications approach and mechanisms for seamless exchange of data, ICT4CART will address the ICT infrastructure related challenges to enable the transition towards advanced levels of road vehicle automation. The ICT4CART infrastructure architecture for connected and automated traffic is anticipated to create a leap in the European competitiveness of the transport industry, while new market opportunities will arise for a wide set of stakeholders.

ICT4CART

⇒ TECHNICAL APPROACH

ICT4CART adopts a hybrid communication approach where all the major wireless technologies, i.e. cellular, ITS G5 and LTE-V, are integrated. On top of that, a distributed IT environment for data aggregation and analytics will be implemented. Cyber-security and data privacy aspects will be duly considered throughout the whole ICT infrastructure. ICT4CART developments will be demonstrated and validated under real-life conditions at the test sites in Austria, Germany, Italy and across the Italian-Austria border.

⇒ HIGH-LEVEL ARCHITECTURE



ICT4CART

⇒ ACHIEVEMENTS

- The project has identified the functional and technical connectivity requirements posed by the needs of higher levels of automation. This ensures communication redundancy and increased reliability.
- Implementation and testing of a standards-based distributed IT environment for data aggregation capable of collecting and managing in an automated and interoperable way all the exchanged data regarding the driver, the vehicle, the vulnerable road users (VRUs) and the infrastructure, leveraging also cloud technology.
- Improved localisation by combining information from different sources and adapt existing tools and algorithms for data fusion.
- Validated and demonstrated the ICT Infrastructure architecture through the project use cases and test sites.

BUDGET	€13.5 million
FUNDING	€13.5 million
START	September 2022
DURATION	36 months
CALL	HORIZON-CL5-2021-D6-01
CONTRACT N°	101069573
COORDINATOR	Adriá Ferrer IDIADA AUTOMOTIVE TECHNOLOGY SA
CONTACT	g.donolato@mail.ertico.com
PARTNERS	EUCAR members: Renault Group, Toyota ME Other: IDIADA, AVL, BAST, Continental, Chalmers, ERTICO, ICCS, Infineon, RWTH-Aachen, RISE, Stellantis, Siemens, TNO, VEDECOM, VICOMTECH, Virtual Vehicle, Uv. Trento, CVC.

www.ccam-sunrise-project.eu

SUNRISE

Safety assurance framework for CCAM technologies

⇒ MOTIVATION AND OBJECTIVES

Cooperative, Connected, and Automated Mobility (CCAM) technologies and systems must prove safe and reliable in every possible driving scenario. However, this remains a significant challenge because the validation of these systems for higher levels of automation by real test-driving is not possible by conventional methods.
The EU-funded SUNRISE project will develop and demonstrate a commonly accepted, extensible Safety Assurance Framework for the test and safety validation of a varied scope of CCAM systems based on HEADSTART, L3Pilot and other initiatives. The project will identify the needs of heterogeneous CCAM use cases and define a scenario-based database framework.

⇒ EXPECTED IMPACT

The project will define, implement and demonstrate the building blocks of this Safety Assurance Framework: harmonized and scalable safety assessment methodologies, procedures and metrics taylored for use cases, a federated European Scenario Database framework and its necessary data interfaces, a commonly agreed simulation framework including tools and interfaces.

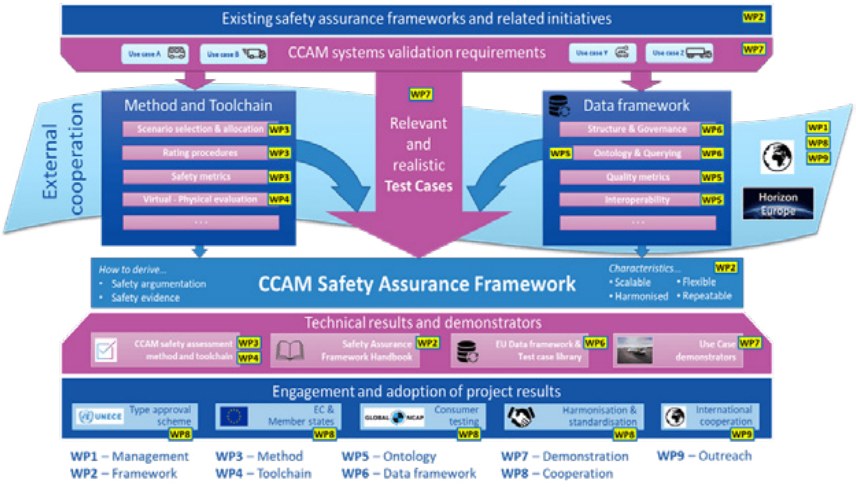
SUNRISE

⇒ TECHNICAL APPROACH

The development and demonstration of a Safety Assurance Framework for the test and safety validation of CCAM systems
will be achieved by:

- Bringing the needs of heterogeneous CCAM use cases;
- Defining a scenario-based database framework that will broaden the HEADSTART methodology;
- Holistically addressing the CCAM test scenario generation;
- preparing the required tools for comprehensive testing (virtual and physical), taking into account robustness, scalability, interoperability, quality and standardization;
- integrating functional safety and cybersecurity;
- involving the use cases from the initial stages, acting as a guiding principle within the project.

⇒ ACHIEVEMENTS



BUDGET	€4.2 million
FUNDING	€4.2 million
START	October 2022
DURATION	36 months
CALL	HORIZON-CL5-2022-D6-01
CONTRACT N°	101075068
COORDINATOR	Sytze Kalisvaart TNO
CONTACT	www.v4safetyproject.eu/qa
PARTNERS	EUCAR members: BMW Group, Toyota ME, Volvo Cars, Renault Other: TNO, BASt, Chalmers, Fraunhofer IVI, IDIADA, IKA, SWOV, THI, UNIFI, VIF, ZF, ERTICO, W2Economics.

www.v4safetyproject.eu

V4SAFETY

Vehicles and VRU virtual evaluation of road safety

⇒ MOTIVATION AND OBJECTIVES

The main objective of V4SAFETY is to provide a comprehensive procedure for conducting computer simulations to determine the long-term performance and impact of road safety solutions, from the identification and collection of the relevant input to the projection of the results to a region of interest and a prediction of changes in performance and impact that might be expected in the coming years.

The specific objectives of V4SAFETY are:

- A widely accepted and harmonised predictive assessment framework for road safety.
- Guidelines to ensure that models and simulation components properly address the behaviour of drivers, vehicle occupants and VRUs.
- A methodology to capture and describe scenarios that accurately represent the baseline.
- Guidelines for models and simulation components to properly address different types of safety solutions.
- Demonstrations of the framework for relevant use cases.
- A methodology for projecting the benefits of the applications of safety measures throughout the EU in the coming years, considering future changes in mobility systems and traffic scenarios.
- Acceptance of the proposed framework through an approach that is standardised, transparent, and holistic.

V4SAFETY

⇒ EXPECTED IMPACT

V4SAFETY contributes to safe, seamless, smart, inclusive, resilient and sustainable mobility systems for people and goods, along the requested impact aspects:

- Secure and trustworthy: harmonised prospective assessment becomes a de facto standard.
- Reduction of serious injuries: accelerated introduction of road safety solutions.
- Reliability and performance: shorter development lifecycles of safety solutions.

V4SAFETY will work towards a wide acceptance and harmonisation of the predictive assessment framework for road safety established in the project. A large network of stakeholders has been established to realize a wide uptake of the results even during project execution.

⇒ TECHNICAL APPROACH

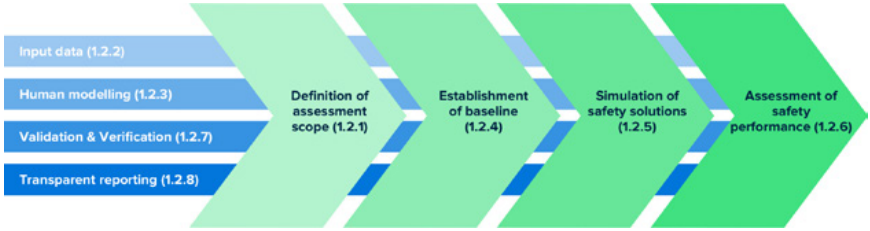
V4SAFETY's methodology consists of a user-centric (WP7) collection of state-of-the-art methods followed by aggregating, and explaining the methods (WP2, WP3, WP4 and WP5), closely interacting with the application in use cases (WP6).

It will document assumptions, describe framework validation processes and prescribe documentation templates to make the accuracy, comparability and validity of the assessment clear (WP2).

All work packages will run in parallel during the first 33 months of the project, allowing early interaction and alignment, optimising and streamlining the process as well as the final deliverables.

V4SAFETY

⇒ V4SAFETY METHODOLOGY



FEDERATE

BUDGET	€2.0 million
FUNDING	€2.0 million
START	October 2023
DURATION	36 months
CALL	KDT-JU-2023-3-CSA-IA
CONTRACT N°	101139749
COORDINATOR	Michael Paulweber AVL LIST GmbH
CONTACT	www.federate-sdv.eu/contact-federate
PARTNERS	EUCAR members: BMW Group, CARIAD (VW) and Renault Group Other partners: Mercedes-Benz, Ford Otosan, Bosch, Continental, Elektrobit, Valeo, ZF, Faurecia, Infineon, ST Microelectronics, ETAS, Verum, TUM, FKA, Virtual Vehicle, VDI/VDE, Eclipse, UAB, FZI, and Vector.

www.federate-sdv.eu

FEDERATE SDV

Software defined vehicle support and coordination project

⇒ MOTIVATION AND OBJECTIVES

FEDERATE aims to bring together all relevant stakeholders to accelerate the development of an SDV Ecosystem, to foster a vibrant European community and orchestrate the SDV R&D&I activities.
FEDERATE will work towards a common understanding on the vision of the SDV program and create an orchestrated advice for current and future projects in this area.
In addition, recommendations for future calls are prepared in alignment with a Roadmap and Joint Vision Document for accelerated SDV R&D&I, will also be created as part of the project.

⇒ EXPECTED IMPACT

1 Large positive impact on the open SDV communities and SDV tool ecosystem.
2 Pool of open automotive grade building blocks for SDV SW stacks (bottom-up approach).
3 Reference SW stack composed of SDV of future building blocks (top-down approach).
4 Automotive grade SW engineering environments for the whole SW lifecycle for SDV of future.

FEDERATE SDV

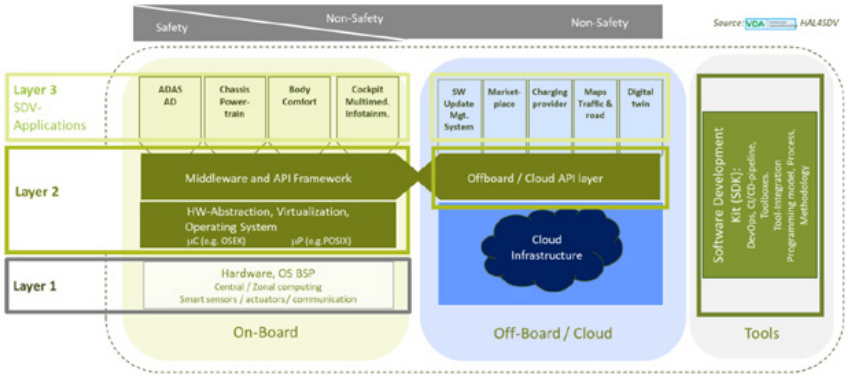
⇒ TECHNICAL APPROACH

The automotive industry faces the challenge of decarbonisation through electrification while striving to create safer, more inclusive, and affordable mobility solutions.

This transformation needs new development processes, driven by the ever-increasing role of software in modern vehicles. This shift has given rise to the concept of software-defined vehicles (SDV), where software takes the driver's seat, evolving in continuous cycles and necessitating a detachment from underlying hardware.

In this context, the EU-funded FEDERATE project is uniting key stakeholders to harmonise the SDV vision, offer guidance to ongoing and future projects, and shape the roadmap for accelerated SDV research and innovation.

⇒ THE FEDERATE SDV PROJECT, THREE-LAYER STRUCTURE AGREEMENT FOR HW/SW STACKS



THE EUCAR STRATEGIC VISION

COMMERCIAL VEHICLES

Commercial vehicles fulfil a wide range of functions for the transportation of people and goods, and many essential services for society are delivered by trucks, buses and vans. A climate-neutral continent by 2050 requires a systemic approach to mobility and transportation.

We develop, in an integrated approach, new vehicle and logistic concepts for safe, reliable, sustainable and efficient transportation.

Expert Group Commercial Vehicle

We develop diversified vehicle set-ups needed for operating in urban, regional and long-haul transportation:

- Vehicles for sustainable and energy-efficient operations that are needed for achieving the Green Deal targets;
- Digitalisation, connectivity and automation enable the logistics and transport sector to implement solutions and services that increase efficiency and performance.

We collaborate with all relevant stakeholders to demonstrate safe and sustainable operations and implement innovations for efficient road transport.

LONG RUN

BUDGET	€33.0 million
FUNDING	€25.0 million
START	January 2020
DURATION	42 months
CALL	LC-GV-04-2019
CONTRACT N°	874972
COORDINATOR	Dr Lukas Virnich FEV
CONTACT	virnich@fev.com
PARTNERS	EUCAR members: DAF Trucks, IVECO, Volvo Group Other: FEV, Ford-Otosan, Irizar, VDL, ABEE, AVL, EATON, Garret, IDIADA, IFPEN, NESTE, PrimoFrio, SHELL, Siemens, Tecnalia, TOTAL, Umicore, Uniresearch.

www.h2020-longrun.eu

LONGRUN

Development of efficient and environmental friendly long distance powertrain for heavy-duty trucks and coaches

⇒ MOTIVATION AND OBJECTIVES

In recent years, climate change has shot to the top of the world's agenda. To combat climate change, many new technologies have been developed. Despite this, a certain field has been left largely untouched. The long-haul transport sector is one of the biggest contributors to global warming, the emissions caused by vehicle fuel consumption being one of the most serious threats to the climate. The EU-funded LONGRUN project aims to combat this problem by contributing to the decrease in the pollution caused by heavy-duty vehicles. It plans to do this by developing an assortment of different engines, drivelines and demonstrator vehicles which release fewer emissions. The end goal is an acceleration of the transition to alternative and renewable fuels.

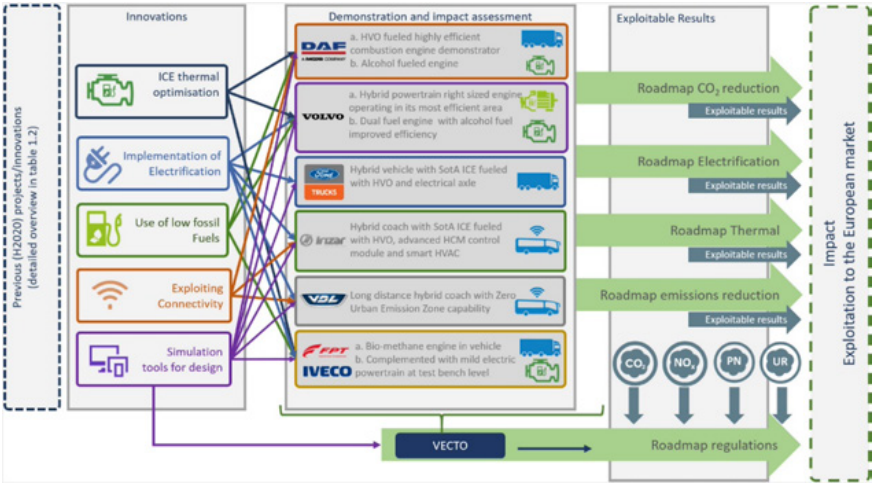
⇒ EXPECTED IMPACT

In the long haul transport sector, the reduction of real driving emissions and fuel consumption is the main societal challenge. The LONGRUN project will contribute to lower the impacts by developing different engines, drivelines and demonstrator vehicles with 10% energy saving (TtW) and related CO2, 30% lower emission exhaust (NOx, CO and others), and 50% Peak Thermal Efficiency.

This project will accelerate the transition from fossil-based fuels to alternative and renewable fuels and to a strong reduction of fossil-based CO2 and air pollutant emissions in Europe.

LONGRUN

⇒ TECHNICAL APPROACH



⇒ ACHIEVEMENTS

- Development of a multiscale simulation framework to support the design and development of efficient powertrains, including hybrids for both trucks and coaches.
- Europe leading position in hybrid powertrain technology and Internal Combustion Engine operating on renewable fuels.
- The OEMs will develop 8 demonstrators (3 engines, 1 hybrid drivelines, 2 coaches and 3 trucks); within them technical sub-systems and components will be demonstrated, including electro-hybrid drives, optimised ICEs and aftertreatment systems for alternative and renewable fuels, electric motors, smart auxiliaries, on-board energy recuperation and storage devices and power electronics. This includes concepts for connected and digitalised fleet management, predictive maintenance and operation in relation to electrification where appropriate to maximise the emissions reduction potential.

BUDGET	€28.0 million
FUNDING	€23.0 million
START	October 2022
DURATION	42 months
CALL	CL5-2022-D6-01-01
CONTRACT N°	101076810
COORDINATOR	Ragnhild Wahl ITS NORWAY
CONTACT	Daniel Fernández dfernandez@railgrup.net
PARTNERS	EUCAR members: DAF Trucks and Volvo Group Other partners: 6 industry partners including ITS solutions providers, test centres and logistical companies; 4 RTOs and 3 universities; and associations of logistical companies. Complemented with road authorities and cities/regions along the corridor.

www.modiproject.eu

MODI

A leap towards SAE L4 automated driving features

⇒ MOTIVATION AND OBJECTIVES

The introduction of connected, cooperative and automated mobility (CCAM) can make a significant improvement to logistic chains. The MODI project will identify and largely resolve barriers on confined areas and on public roads for SAE L4 CCAM vehicles on the corridor from Rotterdam to Oslo, and demonstrate the solutions.

⇒ EXPECTED IMPACT

MODI aims to accelerate the adoption of highly automated freight vehicles through demonstrations and by overcoming barriers to the rollout of automated transport systems and solutions to improve European logistic chains.
Introducing innovative, connected, cooperative and automated mobility (CCAM) will lead to many positive societal effects, such as safer and more efficient transport everywhere and for everyone.

⇒ TECHNICAL APPROACH

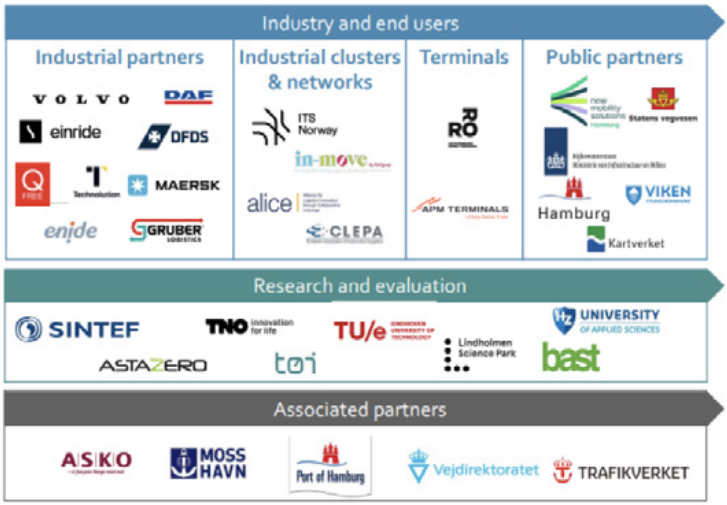
Coordination is a central element of development in this project: it enables early integration of CCAM in current logistic vehicle operations, adding more efficiency benefits for logistics companies and thus creating an attractive path to deployment. Coordination is also needed for smart traffic management in the public domain.

MODI

The project comprises five different use cases, each describing a part of the logistics chain. It identifies what is already possible on SAE L4, and what is not possible yet. For the public roads, the project will focus on understanding and overcoming the regulatory barriers and PDI shortcomings on the motorway corridor with road authorities and OEMs of the project involved. In cocreation with all stakeholders the project will search for an optimal combination of physical, digital infrastructure and OEM equipment, easy to implement and low in costs for all parties.

In addition to the demonstrations, the project provides detailed business models for the logistics sector, demonstrating that the use of CCAM can lead to greater profits, especially when vehicles drive on a coordinated way.

⇒ THE MODI PROJECT CONSORTIUM



BUDGET	€35.5 million
FUNDING	€23.2 million
START	January 2023
DURATION	42 months
CALL	HORIZON-CL5-2022-D5-01
CONTRACT N°	101095856
COORDINATOR	Omar Hegazy Vrije Universiteit Brussel
CONTACT	Ben Kraaijenhagen ben.kraaijenhagen@vub.be
PARTNERS	EUCAR members: Hyundai ME, Renault Trucks (Volvo Group), Scania (Volkswagen Group), Volvo Group. Partners: Ford Otosan, Kässbohrer, Van Eck Trailers, ABB E-Mobility, AVL, Carburos, Airproducts, Hitachi Energy, Michelin, Plastic Omnium, Ricardo, Uniresearch, ZF, ALICE, DPD NL, Colruyt, Gruber Logistics, Gebrüder Weiss, Procter & Gamble, PrimaFrio, PTV, Fraunhofer, University of Applied Sciences HAN, IDIADA, TNO, UIC,CFL Multimodal, Grupo Sésé, IRU.

www.zefes.eu

ZEFES

Zero emission flexible vehicle platforms with modular powertrains serving the long-haul freight ecosystem

⇒ MOTIVATION AND OBJECTIVES

Road freight transport is the backbone of the European economy and essential to the integrated European logistics and transport system. Road transport is by far the most important mode of freight transport, delivering goods across Europe quickly, efficiently, flexibly and cost-effectively. However, it causes negative externalities such as CO2 and particulate matter emissions, and noise.

The ZEFES project addresses the decarbonisation of long-distance freight transport by demonstrating real-world applications with battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs) across Europe, contributing to the aims and objectives set out in the Green Deal and 2ZERO partnership.

⇒ EXPECTED IMPACT

In the ZEFES project, OEMs, suppliers, and research partners will work together towards the overall goal of Zero Emission Vehicles (ZEV) for long distance heavy-duty freight transport, by focusing on efficiency improvements, mass production capabilities and demonstrating the use of the technology in daily operations. This will bring ZEV adoption in the freight transport ecosystem a big step further.

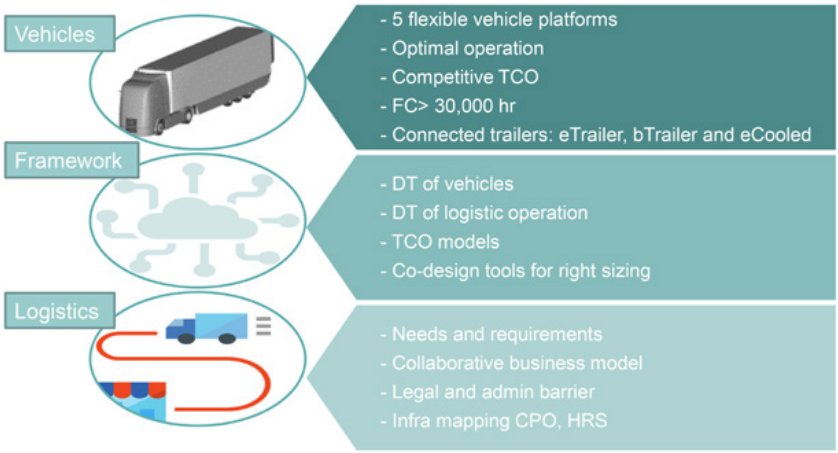
ZEFES

⇒ TECHNICAL APPROACH

The project will deploy nine different long-haul truck configurations, 6 BEVs and 3 FCEVs, in 15 demonstration sites covering:

- Zero emission technologies and fast charging.
- Intermodal and cross-border transport along the TEN-T corridors.
- Fifteen months of operations under real-world conditions.
- One million kilometres of driving data from demonstration actions.

⇒ PROJECT EXPECTED OUTCOMES



BUDGET	€30.4 million
FUNDING	€22.8 million
START	January 2023
DURATION	36 months
CALL	HORIZON-CL5-2022-D5-01
CONTRACT N°	101095882
COORDINATOR	Flavio GRAZIAN UITP
CONTACT	flavio.grazian@uitp.org
PARTNERS	EUCAR members: IVECO Group, Scania, and Volvo Group. Other: Coordinated by UIPT gathers 40 partners from cities, authorities, research centres, universities, infrastructure and automotive supply chain.

Under construction

eBRT2030

European Bus Rapid Transit of 2030: electrified, automated, connected

⇒ MOTIVATION AND OBJECTIVES

eBRT2030 aims to demonstrate the applicability of a new generation of eBRT systems in different urban contexts with innovative solutions that are economically viable and enhanced with new automation and connectivity functionalities. Ultimately, the main objective is to drastically reduce emissions, pollutants and congestion, supporting the transition towards zero emission sustainable transport across Europe.

⇒ EXPECTED IMPACT

Climate change and air pollution are of major concern in Europe and worldwide, and public transport is at the core of efforts for achieving sustainable mobility and improving the environmental footprint of urban transport. Electrified BRT is one of the biggest innovations the bus domain has ever seen because of the positive transformative effects on cities in terms of reduction of congestion and air pollution.

eBRT2030

⇒ TECHNICAL APPROACH

The eBRT2030 project will create a New Generation of advanced full electric, urban and peri-urban European Bus Rapid Transit (BRT) enhanced with novel automation and connectivity functionalities, to support sustainable urban transport by reducing cost/km/passenger, TCO, GHG and pollutant emissions and traffic congestion.

The eBRT2030 project is developed through three main lines:

- The development of technology-focused key innovative solutions for BRT, both at system and subsystem level, at level of vehicle, infrastructure, operation, and IoT connectivity.
- 7 demos of BRT system innovative solutions in real-operation, both city-&operator-led and BRT system-focused, or focused on specific technology innovation at subsystem level that are ready for BRT operations, in Europe and outside Europe (in Latin America and East-Africa), and fully integrated in the whole urban mobility scenario.
- The definition a new European concept of Bus Rapid Transit for year 2030, benefitting of evaluation, multiplication and replication of the real-operation test of innovations, that improve the performance of the whole European urban bus system.

H2Accelerate

BUDGET	€111.0 million
FUNDING	€30.0 million
START	February 2023
DURATION	72 months
CALL	JTI-CLEANH2-2022-03-03
CONTRACT N°	101101446
COORDINATOR	Steffen Møller-Holst (SINTEF)
CONTACT	info@h2accelerate.eu
PARTNERS	EUCAR members: Iveco Group and Volvo Group Other partners: Shell New Energies NL, Daimler Truck AG, Total Energies and Hydrogen, Linde, BP, UNIUNEA, WIRTSCHAFTSKAMMER, FIAP, ERM, VTT, IRU, Element Energy, OMV, EVERFUEL and SINTEF.

www.h2accelerate.eu

H2ACCELERATE TRUCKS

Large scale deployment project to accelerate the uptake of Hydrogen Trucks in Europe

⇒ MOTIVATION AND OBJECTIVES

150 trucks from three European truck OEMs, the Volvo Group, Daimler AG and Iveco Group will be deployed across eight EU member states. Each company will develop, and deploy, 41-44 tonne articulated trucks which are specified for the longest haul operation (ranges over 600km). The trucks will be deployed with over 20 truck operators and operate in a wide range conditions and day-to-day operations.

⇒ EXPECTED IMPACT

The project will create an extensive technical, economic and attitudinal dataset which proves the viability of hydrogen as a solution to decarbonising road freight.
This will be analysed by research partners, SINTEF, VTT and Element Energy to create easily interpreted public report on the performance of the fleet. The results will be disseminated to an audience of:
policy makers (to encourage policy change to favors hydrogen truck deployment), truck operators (to enable future uptake) and the wider hydrogen industry (to underpin supply chain investment).

H2ACCELERATE TRUCKS

⇒ TECHNICAL APPROACH

The trucks will operate on a new network of high throughput hydrogen refuelling stations, designed specifically for trucks (installed by Shell, OMV, TOTAL, Everfuel and Linde).

These will be installed to cover the major TEN-T transport corridors from North to South Europe, with an initial focus on the regions where the vehicles are manufactured (to enable the high level of on-road support that the OEMs' customers rely on).

The stations will be supplied using green hydrogen from a network of large new electrolysers producing green hydrogen consistent with RED II requirements, with associated Guarantees of Origin.

⇒ THE H2ACCELERATE TRUCKS PROJECT CONSORTIUM