AKKA PARTICIPATES TO THE RECET4RAIL PROJECT AS PART SHIFT2RAIL PROGRAMME

NEW RESEARCH & INNOVATION PROJECT FOR THE RELIABILITY AND EFFICIENCY OF RAIL TRACTION SYSTEMS

PRESS RELEASE

Brussels, February 25th, 2021 – RECET4Rail[1] is a collaborative project aiming at improving rail traction sub-systems, under the Shift2Rail Joint Undertaking (JU) Programme. The project involves 13 partners from 8 EU countries, sharing the common goal to research and innovate for the reliability and efficiency of rail traction systems.

The Shift2Rail initiative

The Shift2Rail Joint Undertaking is the European rail programme to seek focused research and innovation (R&I) for market-driven solutions in support to the creation of a Single European Railway Area (SERA), in view of a modal shift in transportation from road to rail for a more competitive and resource-efficient European transport system. This programme intends to transform the current European transport system to one that is more competitive, efficient and sustainable one. Several Innovation Programmes (IPs) addressing specific challenges have already been launched, involving institutes, universities, research centers, rail companies, operators and infrastructure managers from all over Europe.

The RECET4Rail project

The RECET4Rail project's ambition is to provide essential knowledge and competence that can lead the improvement to high TRL levels of Shift2Rail traction demonstrations on trains developed by Shift2Rail members. This collaboration paves the way for future key developments on fields such as digitalization applied to traction, environmental sustainability (especially devising carbon-free traction systems) or reinforcement of standardization to lower complexity and costs.

Four workstreams are envisaged: (i) 3D additive manufacturing and new manufacturing technologies; (ii) Wireless Dynamic Charging for urban vehicles based on silicon carbide (SiC) semiconductors and high power Li-ion batteries sizing; (iii) Investigations on reliability of traction components and lifetime mechanisms; (iv) Big Data, Artificial Intelligence (AI) for smart and predictive maintenance of traction systems.

"*Alongside valuable partners such as Saint-Exupéry IRT (Institute of Technological Research) and ICAM (Catholic Institute of Engineering), AKKA is proud to provide its technological expertise to the RECET4Rail project, focusing on the development of an automated mesh tool. Meshing is an fundamental part of engineering simulation process where complex geometries are splitted into simple elements which can be used as discrete local approximations of the larger domain. It is a crucial step for the development of the 3D additive manufacturing components which will explore the technologies' benefits for traction sub-systems.*" added **Pierre LION, Group director of AKKA Research, AKKA's in-house R&D and innovation centre**.

Furthermore, RECET4Rail will collaborate with key companies in the rail field, especially collaborating with PINTA3 project, also part of the Shift2Rail community, in terms of manufacturing and validation of the prototypes solutions on train traction systems. PINTA3 is composed of 8 large enterprises active in the rail sector and is aimed at addressing demonstrators for the next generation of traction systems and all the innovative technologies that can improve the competitiveness of the rail traction systems.

[1] RECET4Rail: **R**eliable **E**nergy and **C**ost-**E**fficient **T**raction **S**ystem For **Rail**way.

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Note to editors:

Each workstream has a main objective within the overall purpose to improve the traction system by leveraging new technologies:

i. The 1st Workstream "**3D additive manufacturing and new manufacturing technologies"** will mainly focus on exploring the benefits of technologies for traction sub-systems by 3D tailored conception work frame or analyzing the way to increase the thermal performance on heat exchangers.
ii. Within the research planned in the 2nd Workstream on "**Wireless Dynamic Charging for urban vehicles based on SiC semiconductors and high power Li-ion batteries sizing"**, RECET4Rail will focus on giving a clear assessment of the wireless power transfer (WPT) Opportunistic Charging for specific routes versus the size and performances of the on-board battery, improve the efficiency of the power transfer and creating a competitive charging solution.
iii. The 3rd Workstream "**Investigations on reliability of traction components and lifetime mechanisms"** will aim at reducing the threshold for railway rolling stock manufacturers to introduce the SiC technology. The introduction of SiC power modules increases efficiency of traction convertors and leads to more compact, lighter and less noisy systems and large savings of electrical energy consumption.
iv. Finally, the 4th Workstream **"Big Data, Artificial Intelligence (AI) applied to Traction systems smart and predictive maintenance"** will focus on the exploitation of smart maintenance management systems by the development of Machine Learning and Artificial Intelligence (AI) techniques.

The project consortium of RECET4Rail is composed of 13 partners with complementary knowledge areas and skills to promote the scientific outcome and to ensure the industrial uptake and delivery of tangible results in the field: UNIFE – European Rail Industry Association (Belgium, Coordinator), ZABALA BRUSSELS (Belgium), Universität Bremen - IALB (Germany), SAFT (France), WUT – Politechnika Warszawska (Poland), IKERLAN (Spain), ARAMIS (Italy), RISE - Research Institutes Of Sweden (Sweden), AALTO University (Finland), POLIMI - Politecnico di Milano (Italy), AKKA Technologies (France), IRT Antoine de Saint Exupery (France), ICAM - Institut Catholique D'arts et Metiers (France).

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For further information please visit RECET4Rail website or get in contact with the project coordinator.

PASSION FOR TECHNOLOGIES

PRESS RELEASE

About AKKA Technologies

AKKA is the European leader in engineering consulting and R&D services in the mobility segment. As an innovation accelerator for its clients, AKKA supports leading industry players in the automotive, aerospace, rail and life sciences sectors throughout the life cycle of their products with cutting edge digital technologies (AI, ADAS, IoT, Big Data, robotics, embedded computing, machine learning, etc.).

Founded in 1984, AKKA has a strong entrepreneurial culture and is pursuing its fast-paced growth and international development in line with its CLEAR 2022 strategic plan. With 22,000 employees, who are passionate about technology and dedicated to advancing the future of industry, the Group recorded revenues of €1.8 billion in 2019.

Following the completion of the friendly take-over bid of Data Respons launched in January 2020, AKKA now holds 100% of the company's shares; with the success of this operation, AKKA leverages the most comprehensive portfolio of digital solutions in Europe to harness the growing demand from its customers in the mobility sector.

AKKA Technologies is listed on Euronext Paris and Brussels – Segment A – ISIN code: FR0004180537

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