AITEC SERVICE OFFER FOR SHIFT2RAIL

AITEC can make impactful contributions to help your project meet the call objectives; for instance in the following Innovation Programs:

IP1

Cost-efficient and reliable trains, including high capacity trains and high-speed trains

Knowledge in safety and security elements in rail vehicles and infrastructures / User Driven Innovation techniques / Analysis of user requirements for a more comfortable, safe and affordable travel experience.

IP2

Advanced Traffic Management & Control Systems

Development of safety and security functionalities to support the current and future needs of signaling systems / Risk assessments / Calculation of greenhouse gases emissions.

IP3

Cost-efficient, sustainable and reliable high capacity infrastructure

Reduction of maintenance costs in tunnels and bridges / Quantitative risk assessment for the analysis of failures in rolling stock and infrastructure / Development of new design concepts of the “Future station” through User Driven Innovation techniques.

IP4

IT solutions for attractive Railway services

Assessment of users current and future railway services needs (based on age, gender, culture, etc.)

IP5

Technologies for sustainable & attractive European Freight

Methodologies for the optimization of the transport and handling time in terminals / Improvements for the development of new terminal management systems / Identification of parameters and requirements in order to facilitate data exchange between involved parties in the intermodal transport chain / Improvement of wagon design from a safety perspective.

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SHIFT2RAIL

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AITEC IN A NUTSHELL

AITEC is an **R&D performing SME** established in 2002 with the aim to increase the innovation capacity, technology level, and competitiveness of companies. In 2016, AITEC obtained the stamp of innovative SME granted by the Spanish Ministry of Economy and Competitiveness.

AITEC is expert in the management of R&D projects in the field of **transport, mobility and logistics**, with relevant experience in **rail container terminals, safety, security, environment, maintenance procedures and Corporate Social Responsibility (CSR)**.

AITEC is **active in** the **dissemination** of scientific results in peer-reviewed scientific journals and international conferences.

AITEC has a **network of contacts** around Europe (Finland, Bulgaria, etc.) and other third countries (China).

AITEC EXPERTISE AND SERVICES

AITEC is involved in scientific research for the development of an **interconnected platform for all members of the freight transport supply chain,** the development of **safer and more efficient multimodal terminals** with connections with the railway system, and the **development of methodologies to help decision makers** analyze barriers, human-machine and human-infrastructure interactions and the **acceptance of new technologies by the consumers/users/citizens.**

AITEC has also developed a **methodology** (DIAMOND methodology) for the analysis of requirements from a user perspective in order to **improve the quality of the transport service** (for users of vehicles and in terms of infrastructure) in order to increase the possible amount of users and increase the use of public transportation.

AITEC also offers its **consultancy services to railway companies** in order to improve **the safety, security, and resilience of their installations**, taking into account environmental parameters. AITEC has a long-standing experience in all the **safety and regulatory issues needed for an appropriate handling and transport of freight** (by rail, road, maritime and air transport).

In addition, AITEC offers a variety of transversal services that aim to reduce system costs:

- **Cost Benefit Analysis.**
- **Life-cycle costs assessments.**
- **Methodologies for the analysis of maintenance procedures**
- **Calculation of carbon emissions (e.g. GHG Protocol)**
- **Environmental risks assessments**

RELATED PROJECTS

AITEC has been involved in several projects for the improvement of the safety and security of the infrastructures and procedures in maritime and inland multimodal terminals with connections to the rail system and in railway stations, such as:

European Union
European Regional Development Fund

CO2 Multidecisions Terminals: this tool improves the design of port and inland container terminals, optimizing safety by avoiding the stacking of containers with chemicals, and decreasing the probability of accidents. Another parameter considered in the design was the reduction of the carbon footprint without affecting other relevant parameters as cost efficiency. This project has been funded by the EU (ERDF).

European Union
European Regional Development Fund

OPTIPORT: development of a holistic decision-making process model for the design of a Terminal Operating System (TOS) of a terminal of containers, with the objective of reducing its carbon footprint without reducing efficiency. This project has been funded by the EU (ERDF).

DIAMOND - Revealing actionable knowledge from data to support fair women's inclusion in transport systems: iaims at progressing towards an inclusive and efficient transport system through an interdisciplinary analysis combining methods from social sciences and computer science. The project will provide a toolbox that will give recommendations on how to achieve fair inclusiveness for women in the use of railways and public multimodal transport.

AITEC contribution to the project includes the development of the DIAMOND methodology for the analysis of data, digital questionnaires to obtain data from women and online consultation based on Dynamic Argumentative Delphi (DAD) method.

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