

## IRIS – Innovative railway interior systems

### Summary

The IRIS project aimed to design and develop a set of prototypes for four complementary subsystems of train interiors:

- Side panels/window
- Ceiling
- Luggage
- Air conditioning ducts.

The manufacture and integration of these components were improved, reducing operating costs and improving passenger comfort by raising the attractiveness and competitiveness of the system.

The project brought together several technological advances based on a concept of modular, flexible and standardised construction, with the integration of electronic systems and exploration of technologies in response to the main challenges of railway operators (reinvestment in infrastructure, bet on the attractiveness of equipment and reduction of operating costs).

An intelligent approach to structural, comfort and safety functionalities - reduction of component weight of the composite, use of recycled materials and study of various mounting strategies - as well as the development of innovative features - active and dynamic information signs directed at the passenger, security warnings, ambient lighting with autonomous management, local heating - which added greater value to train interiors.

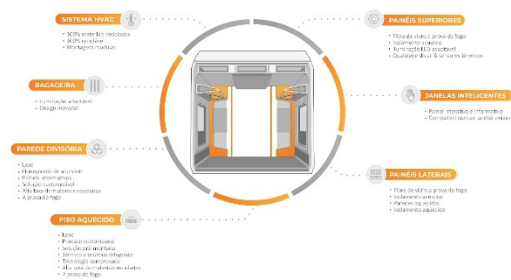


Figure 1. Diagram of improved components.



Figure 2. Mock-up of the prototypes developed during the project.



### Project Reference

POCI-01-0247-FEDER-039835 / LISBOA-01-0247-FEDER-039835

### Leading Institution

MCG – Manuel da Conceição Graça Lda. (Portugal)

### Partners

Almadesign – Conceito e Desenvolvimento de Design, Lda. (Portugal), Cablotec – Cablagens e Sistemas Lda. (Portugal), Farnopol – Indústria de Transformação de Peças em Polyester Lda. (Portugal), WISEWARE Lda. (Portugal), Itecons – Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade (Portugal)

### CERIS Principal Investigator

António Tadeu ([tadeu@itecons.uc.pt](mailto:tadeu@itecons.uc.pt))

### CERIS Research Team

João Almeida, Beatriz Marques, Inês Simões, Joana Prata, Julieta António, Miguel Esteves, Enrico Zacchei

### Funding

COMPETE 2020, Portugal 2020

### Period

2019-2022

### Total

2 151 839.95€

### CERIS

Coimbra Hub: 334 906.95€

### Project Website

<https://www-iris-railwayproject.com/pt>