

eUltimate – Improve public transport electrification to fight against climate change

Summary

Key commitments outlined in the COP-22 declaration include electrification of new buses by 2025. However, only 2% of the global stock of 10.4 million buses and coaches were fully electric in 2018. Many cities are launching battery electric buses to reduce the emissions caused by public transport fleets. A wide spectrum of charging technologies and operational schemes have been developed as a solution to decarbonise bus systems. Depending on the charging scheme chosen, different impacts on the operating costs, public space consumption and emissions are expected during the vehicle's lifetime. This poses problems for cities.

The aim of this project is to develop a decision support system (DSS) that designs the optimal charging system for a given city and quantifies the impact of the electric service on bus agencies and other stakeholders. The project is focused on the link between vehicle and charger, the cornerstone for their deployment in cities. eUltimate will present a vendor-agnostic decision support tool (DST) to transit operators, cities and national/European associations, to allow them to undertake fleet renewal.

The eUltimate project will accelerate the transition towards sustainable urban mobility, and on the other hand, improve the competitiveness of European cities in the mobility sector. Regarding economic impacts, the project is expected to decrease the operational costs of electric buses and facilitate bus fleet management. eUltimate will provide tools to cities and operators to overcome obstacles and barriers regarding the electrification

of transport services (bus charging, battery range, continuous technological evolution, etc.).

The spread of electric bus services in European cities will contribute to some key social impacts such as the reduction of air pollutant emissions, noise levels and GHG emissions. Besides that, another expected social impact will be the capacity building in the field of electric mobility amongst public transport company employees and potential further professional development through training activities derived from the project.

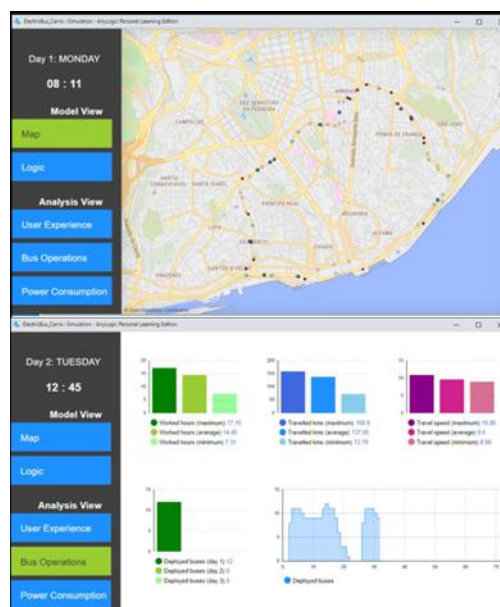


Figure 1. Fleet Emission Simulator, developed by IST.

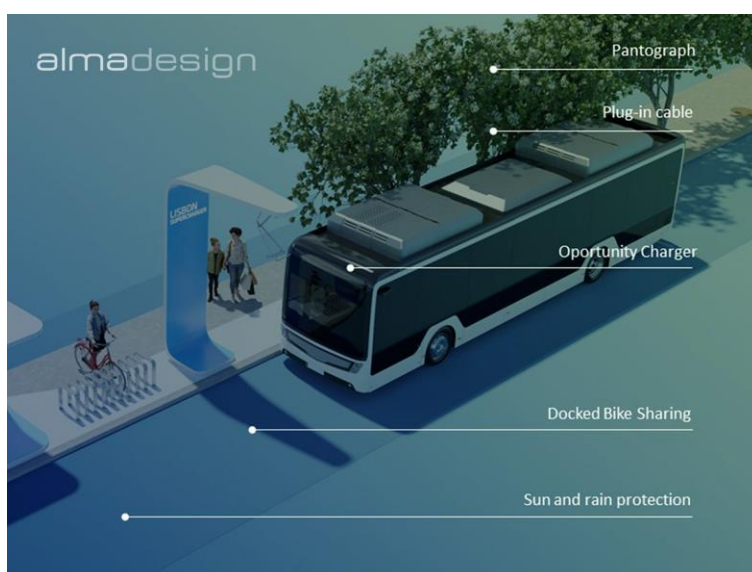


Figure 2. Concept of the bus top of the future developed by the Portuguese team: Almadesign with the support of CARRIS and IST.



Project Reference

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Leading Institution

UPC – Universitat Politècnica de Catalunya · Barcelona Tech (Spain)

Partners

AMB – Barcelona Metropolitan Area (Spain), Barcelona City Council (Spain), BR – Barcelona Regional Agency for Urban Development (Spain), City of Milan (Italy), Municipality of Zalaegerszeg (Hungary), Almadesign (Portugal), AMAT – Agenzia Mobilità Ambiente Territorio (Italy), Carris (Portugal), Electrobus Europe Zrt. (Hungary), FGC – Ferrocarrils de la Generalitat de Catalunya (Spain), IDIADA Automotive Technology S.A. (Spain), TMB – Transports Metropolitans de Barcelona (Spain), TUSGSAL – Transportes Urbanos y Servicios Generales, S.A.L. (Spain), CARNET – Future Mobility Research Hub (Spain), Czech Technical University in Prague (Czechia), IST – Instituto Superior Técnico (Portugal), HUMDA – Hungarian Motorsport Development Agency (Hungary), Politecnico di Milano (Italy), Zone Cluster Nonprofit Ltd. (Hungary)

CERIS Principal Investigator

Rosário Macário (rosariomacario@tecnico.ulisboa.pt)

CERIS Research Team

Joana Cunha, Vasco Reis

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2021

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787 994.00€

CERIS

27 750.00€

Project Website

eultimate.upc.edu