



EUROPEAN BUS SYSTEM of the FUTURE 2

Advanced solutions for improved efficiency and attractiveness of urban bus systems

MAIN ACTIVITIES AND INNOVATIONS

EBSF_2 aims to test and evaluate innovative solutions for urban and suburban bus systems through demonstrations in real service. The ultimate goal are to improve the efficiency of operations mainly in terms of costs and energy consumption as well as the image of the bus for the users.

To achieve the project's mission, the EBSF_2 demonstrations address several topics:

- strategies and solutions to improve **energy and thermal management of buses**, especially by improving the efficiency of the auxiliaries and sub-systems on-board
- innovative concepts and technologies for **green driving assistance systems**, adapted to specific conditions of the public transport context as well as to different vehicles technologies (diesel, hybrid, and electric)
- feasibility of **innovative Human-Machine Interfaces (HMI)** solutions
- new **bus layout concepts for optimised interface between vehicle and platform** (accessibility, comfort, passengers flow, dwell time) as well as design opportunities offered by electric vehicles
- **fully interoperable IT solutions** based on European standards integrated in the bus fleet's normal operations
- first implementation of a **modular bus** that will show new ways for the adaptation of the vehicle capacity to the actual demand
- new systems for an **intelligent garage** as well as improved algorithms and processes for predictive maintenance
- new configurations of the **interface between the vehicle and urban infrastructure** (in particular bus stops and terminals), harmonised vehicle layout and bus-stop design

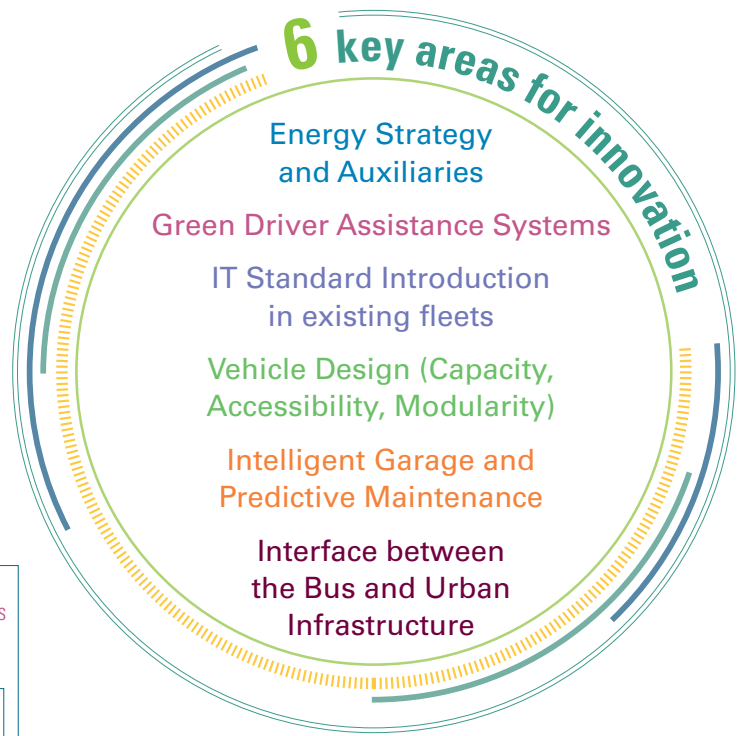
Guidelines and Tools will be derived from the experience gained during the tests of the EBSF_2 technological solutions to facilitate their introduction beyond the specific project tests, namely:

- **guidelines for including energy efficiency in procurement material**
- **guidelines for ergonomic design of driver assistance systems interface**
- **guidelines for the use of adaptable buses**
- **the electric Bus Passengers Simulation Tool (eBPST)**
- **design and decision-making methodologies for public transport infrastructure design**
- **the Design Charter for new electric buses**

Together with the update of the Innovative Bus System Roadmap, developed in 2011 in the EBSF project, the guidelines form a part of the innovation management process of EBSF_2.

12 DEMONSTRATION SITES

Each site will test a subset of innovations, identified according to their technological maturity to ensure an easy commercialisation after the end of the project. Prototypes and simulation tools will be used as well for more futuristic solutions. All together, the demonstration sites address most current propulsion technologies (internal combustion, hybrid, electric) and a wide range of bus systems, from BRT to local lines.



Paris

Green Driver Assistance Systems
 Vehicle Design (Capacity, Accessibility, Modularity)
 Intelligent Garage and Predictive Maintenance
 Interface between the Bus and Urban Infrastructure

Helsinki

Energy Strategy and Auxiliaries
 Green Driver Assistance Systems

Gothenburg

Energy Strategy and Auxiliaries
 Vehicle Design (Capacity, Accessibility, Modularity)
 Interface between the Bus and Urban Infrastructure

Paris Area

IT Standard Introduction in existing fleets
 Intelligent Garage and Predictive Maintenance

Lyon

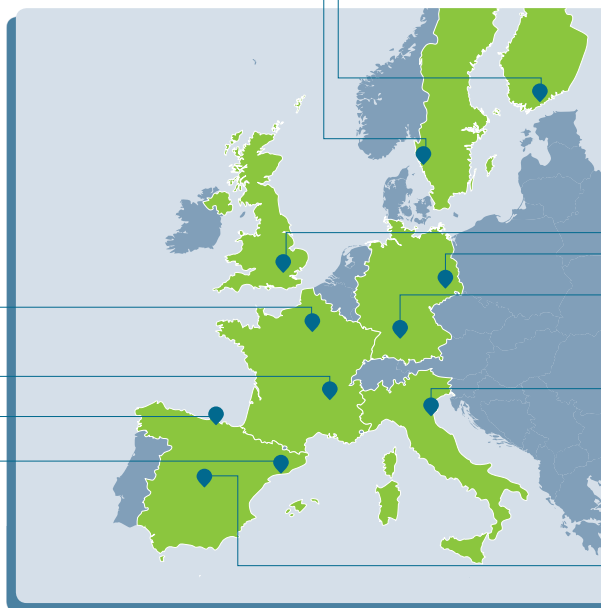
Energy Strategy and Auxiliaries
 Green Driver Assistance Systems
 IT Standard Introduction in existing fleets

San Sebastian

Green Driver Assistance Systems
 Vehicle Design (Capacity, Accessibility, Modularity)
 IT Standard Introduction in existing fleets
 Intelligent Garage and Predictive Maintenance

Barcelona

Energy Strategy and Auxiliaries
 Green Driver Assistance Systems
 IT Standard Introduction in existing fleets



London

IT Standard Introduction in existing fleets

Dresden

Vehicle Design (Capacity, Accessibility, Modularity)

Stuttgart

Energy Strategy and Auxiliaries

Ravenna

IT Standard Introduction in existing fleets
 Intelligent Garage and Predictive Maintenance

Madrid

Green Driver Assistance Systems

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