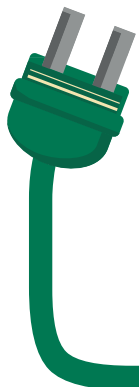# sm@rtCEM

The road to Smart Connected Electro-Mobility

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To encourage the use of Electric Vehicles as part of everyday life four European cities/regions (Barcelona, Gipuzkoa-San Sebastian, Newcastle and Reggio Emilia) have come together in smartCEM and will run pilots for -advanced electric vehicle (EV) mobility services: EV-navigation, EV-efficient driving, EV-trip management, EV-charging station management and EV-sharing management.

smartCEM optimises five traditional ICT services for the needs of electrical vehicle drivers. EV Navigation adds real-time information such as charging points and estimation of battery range. EV Efficient Driving provides the driver advice on how to change his driving style thus extending the driving range and becoming more efficient. EV Trip Management extends the users travel options, while EV Vehicle Sharing Management gives possibilities to a wider group of users to experience electrical vehicles. Finally, EV Charging Management gathers up and presents a consistent, unified structure for the identification and localization data of all charging stations available in smartCEM pilot sites. SmartCEM will pilot its services using all types of road vehicles: electric cars, scooters, deliver vans and hybrid bus.

Barcelona   **Gipuzkoa - San Sebastian**   **Newcastle**   **Reggio Emilia**

www.smartcem-project.eu

EV-navigation

Mr Z drives an EV with smartCEM equipment. An onboard unit allows Mr Z to programme his destination; the unit will display the entire route, based on eco-navigation principles and calculated to suit the needs of the EV. The device will also show the location of Points of Interest (POIs) like charging stations, showing real time availability of stations and include a battery management system showing which charging point is available based on Mr Z's vehicle state of charge or Mr Z's driving style. The EV-Navigation service will make charging as flexible, secure and convenient as possible for Mr Z.

EV-efficient driving

Ms V drives an EV with a smartCEM system which evaluates her driving style taking into account the EV requirements. This service will provide Ms V with the necessary information she needs to maximise her driving efficiency and eco-driving-style. The service will monitor Miss V's driving style and vehicle usage.

EV-trip management

Mr Z plans to use public transportation to go from location A to location B. He is using a WEB journey planning system which shows the best multimodal public transport combination for a given journey. This tool provides car-sharing or scooter-sharing transport as part of the public transport offer, and will allow Mr Z to book and pay such an EV from the system. This service builds from existing journey planning systems including real-time information for bus, rail, and metro services, ensuring that EVs are fully integrated to the public transportation offer.

EV-vehicle sharing management

Mr Y wants to go from A to B and finds it very convenient to use a shared vehicle for this purpose, even more because it is smart and electric. He books a car / electric scooter from his smartphone or web portal; the EV-sharing back office system assigns a vehicle to the user at the agreed time and location with more than enough battery State-of-Charge; the user gets to the vehicle at the start time and unlocks it by means of an smartcard or through his smartphone app. User driving style is remotely monitored Real-Time and recommendations on EV-efficient driving are generated and shown to the user on-trip (for electric cars) and post-trip (for electric scooters). These are shown whether on the On-Board Unit, the smartphone app or the web portal.

EV-charging station management

Mrs X is already driving an electric vehicle. In order to extend its range, she wants to see which charging stations are within her reach. This service provides the identification and localisation details of the charging stations. The data is also made available to the other four smartCEM services, the EV-navigation being the most prominent consumer.

Barcelona   Gipuzkoa – San Sebastian   Newcastle   Reggio Emilia

Short facts

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