SEVENTH FRAMEWORK PROGRAMME

EUROPEAN COMMISION

SMARTV2G:
Smart Vehicle to Grid Interface

A collaborative project funded by the European Union's Seventh Framework Programme (FP7)

Project Objectives

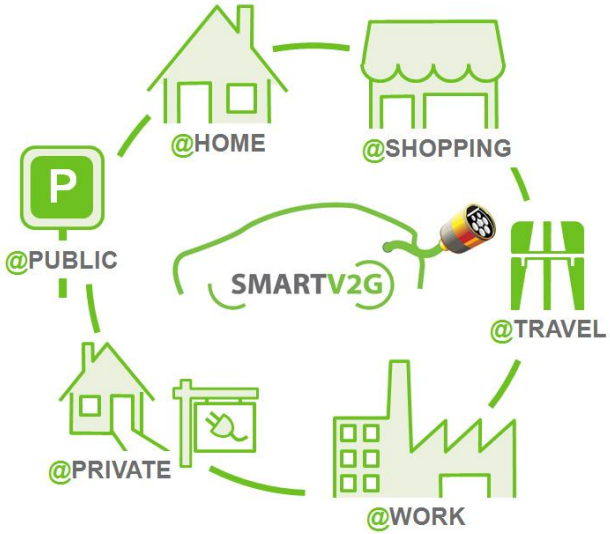
In a context of an obliged continuous optimisation of the energy consumption rates in developed societies, embedded systems and solutions can play a significant role in the transition process towards a Sustainable Urban Life concept in European countries. One of the main and most promising technological areas that are expected to contribute in a most relevant way to that overall target is electromobility.

In that sense, the Smart Vehicle to Grid Interface project (SMARTV2G) has been launched. Its major target is the connection of electric vehicles to the grid by enabling controlled flow of energy and power through safe, secure, energy efficient and convenient transfer of electricity and data.

This will entail, among other specific objectives, the development of a new generation of technologies allowing the seamless and user-friendly energy load of electric vehicles in urban environments in the frame of an intelligent energy supply network managed by an embedded control system.

User Scenarios

To meet market demands as well as needs of electric vehicle users the project takes into account all typical charging scenarios:



@HOME: Most people want to charge their car in their own garage

@SHOPPING: Retailers plan to attract customers with special charging offers

@TRAVEL: To overcome range limitations users need fast charging at highways

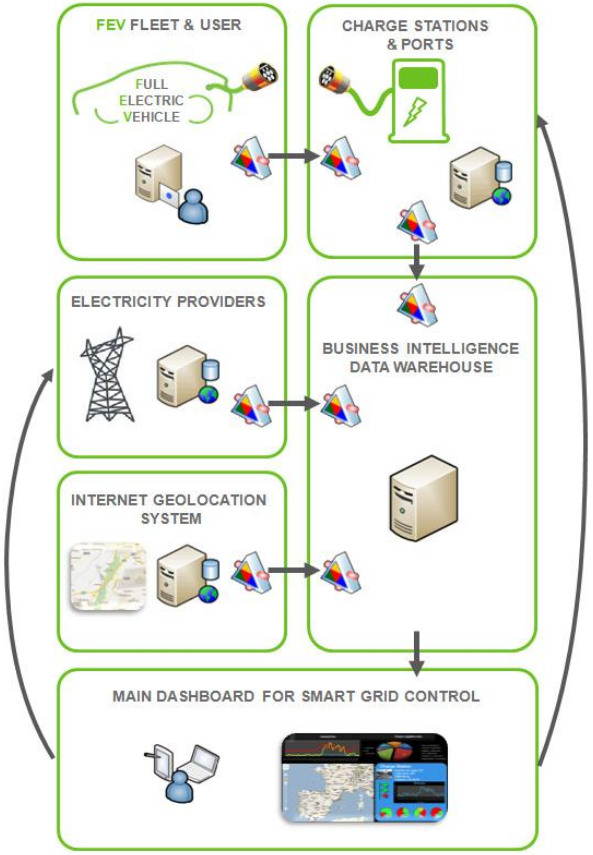
@WORK: Employees want to use attractive charging opportunities at their work site

@PRIVATE: To sell any surplus of electricity charging will be also offered at private homes

@PUBLIC: Most people will also use charging stations at public parking spots

The Architecture

Because of various user scenarios it is necessary to implement a specific architecture not only for the communication between **electric vehicles** and **charging stations** but also to the different **electricity providers**. A **geolocation system** is the base for a charging station finder. An **intelligent data warehouse** will handle all data from different data sources. At the top of the system a **main dashboard** will help to control the system in a very visual way.



Consortium

In order to be able to achieve the exposed objectives, the project consortium comprises a well-balanced group of 7 partners of the energy industry, alternative energy components developers, software & embedded systems developers, and technological R&D from 4 European countries:

ITE Instituto Tecnologico de la Energia, Spain (Coordinator)

CIT Development S.L., Spain

Elektro Ljubljana, D.D., Slovenia

ETREL Svetovanje in druge storitve d.o.o., Slovenia

Fraunhofer-Einrichtung für Systeme der Kommunikationstechnik ESK, Germany

Technomar GmbH, Germany

Uni Roma Universita degli Studi di Roma la Sapienza, Italy

About SMARTV2G

SMARTV2G is a project funded by the European Commission under the Seventh Framework Programme (ICT for fully electric vehicles).
Total cost: 3.27 million euro
EU contribution: 2.52 million euro
Execution: from June 2011 to May 2014

During this time the consortium will

- Develop a vehicle to grid system made up of a grid of smart charging stations
- Define control systems architecture
- Develop information processing between EV and charging stations
- Define specification of standards for communication, interfaces and information processing
- Ensure security and identification when using charging stations
- Test and validate the developed technology and systems
- Disseminate projects results and ensure scalability for future economic use

Visit our website to learn more about the SMARTV2G Project:

www.smartv2g.eu

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