ON-ROAD CHARGING OF ELECTRIC VEHICLES : THE FABRIC PROJECT

Jérôme Perrin *, Institut VeDeCoM, France
Angelos Admitis, ICCS (Inst. Communication Computer Syst.), Greece
Vittorio Ravello, CRF (Centro Ricerche Fiat), Italy
Jean-Charles Pandazis, ERTICO, Belgium
Denis Naberezhnykh, TRL (Transport Research Laboratory), UK
Sebastiaan Meijer, KTH (Kungliga Tekniska Hoegskolan), Sweden
* jerome.perrin@vedecom.fr

A key to the future success and public acceptance of electric vehicles (EV) relates to commercial solutions to increase their range, given the constraints of low specific energy and high cost of batteries.

A first category of options consists of increasing the vehicle range by adding a fuel-powered electricity generator on-board, be it a gasoline or gas-fuelled combustion engine in a plug-in hybrid or range extender configuration, or an hydrogen fuel cell.

A second category of options consists in offering the most convenient service and infrastructure for battery recharging from the grid. This goes from providing fast charging to switching from cable plug-in to wireless charging as the vehicle is idle. But the ultimate service would be continuous or quasi-continuous on-road charging while driving. The latter solution is in the agenda of transport electrification roadmaps, but its technical performance, economical viability, and socio-environmental impacts needs to be assessed. The European project FABRIC (FeAstiBility analysis and development of on-Road chargIng solutions for future electric vehiCles), gathering 24 partners from 9 countries (Belgium, Italy, France, Germany, Greece, Netherlands, Spain, Sweden, UK), from Jan. 2014 to Dec. 2017, aims at providing relevant answers to these questions.

**Introduction**

**Methodology & planned work**

FABRIC is structured in sub-projects: SP1-Management (leader: ICCS), SP2-ICT solutions (ERTICO), SP3-Charging Solutions (TRL), SP4-Integration, Infrastructure & Testing (ICCS), SP5 Assessment (KTH), following a step-wise approach.

Overview of the Satory-Versailles test site

Schematic principle of the electrical infrastructure and ICT solutions related to the operation of an on-road dynamic inductive charging station