

France prepares to introduce New-Generation Electric Mobility



The main electric mobility players are joining forces to plan and co-ordinate the roll-out of a charging infrastructure for new-generation electric vehicles. It will consist of terminals and information systems adopting the ISO 15118 standard. The end result will be a simplified user experience, improved energy management and greater assurance of system interoperability and security, improving user confidence in charging. All players in the sector will be involved: vehicle and charging station manufacturers, charging infrastructure operators, mobility service providers and electricity suppliers and distributors. The Committee behind this initiative will enable French players to improve their R&D and innovation capability and to give France a presence on the European stage.

A consortium built on new-generation charging technology in France

In a memorandum of understanding signed on 7 June, **AFIREV (the French association for electrical vehicle charging roaming)**, **AVERE (the French association for the development of electric mobility)**, the **PFA (Automobile Platform)** and the **VEDECOM Energy Transition Institute** united to form an **Initiative Committee for New-Generation Charging**, intended to involve the entire French ecosystem. This consortium will also be responsible for implementing technical decisions relating to the ISO 15118 standard at European level, particularly with regard to cybersecurity (PKI).



“The French automotive industry supports all the specific measures to give a real acceleration of the deployment of charging infrastructure in France, offer a charging solution to each user and give confidence to future buyers of electric vehicles, says Jean-Luc Brossard, R&D Director of the PFA. These measures must focus as a priority on road charging solutions, in collective housing and on major highways of the national network. As part of the car recovery plan announced on May 26, the desire to support the ambition of one million electric or rechargeable hybrid vehicles rolling by 2022 is declined in a first objective of 100,000 charge points public by the end of 2021. The future charging infrastructure will have to be homogeneous, interoperable, intelligent, capable of simplifying the user experience and providing services with high added value.”

The role of this Committee is to implement **collaborative measures in two stages**: firstly, to define the appropriate cybersecurity architecture (PKI) for the new standard, then to support the rollout of Plug and Charge (PnC) and of the “Smart Charging” system.

AFIREV Chairman **Gilles Bernard** explains: *“Today, it is essential for us to work together so that we can move to this new stage in the deployment of charging infrastructure and develop a unified approach across Europe. An initial group of around fifteen players will come together around 2020, being further strengthened in 2021-22 by all players in the sector.”*



The Committee has mandated VEDECOM, as a research institute which already has a strong involvement in future recharging work, to provide technical and economic co-ordination and implement these initiatives.

Rolling out a smart, interoperable charging infrastructure

For France, the Committee's ultimate goal is to create conditions favourable to the introduction of new energy services, ensuring that all new alternating current (AC) and direct current (DC) charging points installed in France can **be interoperably ISO 15118 compatible** and that Charge Point Operators (CPOs) and Electric Mobility Service Providers (eMSPs) can **supply Plug and Charge (PnC) and Smart Charging** services.

To achieve this goal, this project will specify the technical requirements for the deployment of PnC and Smart Charging, based on international standards.

In the words of AVERE Chairman Joseph Berreta, *“the electric mobility ecosystem is now reaching an important stage in its development. To reach maturity, the market must be able to roll out new charging services that will improve and simplify the user experience while improving the integration of electric mobility into the electrical system. These major developments require the deployment of coherent public policies which include support programmes.”*



In addition to its considerable enhancement of communication between an electric vehicle and a charging infrastructure, the ISO 15118 standard provides drivers with new services:

- **Plug and Charge (PnC)**, which automatically identifies the user's service contract simply by connecting the charging cable between the vehicle and the charging point, with a high level of electronic security and a simplified user experience;
- **Smart Charging**, whereby a charging schedule can be negotiated between the charging point and the vehicle, optimised according to their technical constraints, the driver's needs and requirements, pricing constraints and the networks' electrical constraints;

A new, simple, innovative and secure protocol which supports future innovations

Today, a pass card is generally needed for charging. In future, regardless of the vehicle, charging infrastructure operator or electricity supplier, Smart Charging will work independently of this system, providing quick, fluid and secure operation.



VEDECOM Director General **Philippe Watteau** believes that *“we are ready: the charging point-to-vehicle communication process using ISO 15118 works, and is backed by most of our European partners. The new generation of charging infrastructure brings major challenges in terms of authentication, security and trust, but also of deployment and interoperability. We are going to address these issues incrementally, drawing on the existing infrastructure. However, we have yet to jointly specify and promote the best PKI infrastructure. In a second phase, we will be able to build on this work and innovate disruptively,”* he adds.

That's because the Initiative Committee for New-Generation Charging's second objective is to **facilitate the future deployment of emerging use cases**, including:

- **bidirectional charging**, which uses the charging infrastructure to negotiate and optimise the reinjection of electricity stored in the battery to the house (vehicle-to-home), the building (vehicle-to-building) or the electricity network (vehicle-to-grid);
- **cable-free charging** (inductive or automated charging).

About AFIREV, the French Association for Roaming and EV charging services

French Association for roaming of EV charging services, AFIREV, has been created under the patronage of the Ministry of Economy, Industry and Digital, and announced during Mondial de l'Automobile in Paris in October 2014. The association has been officially registered in Paris on the 3d of March 2015 by 7 major operators for e-mobility: Bolloré Blue Solution, Bouygues Énergies Services, Engie Ineo, GIREVE, RENAULT, SODETREL (EDF group), VINCI Energies. New members joined the team since. The aim of AFIREV is to coordinate initiatives and elaborate standards between stake holders to promote interoperability for roaming, be spokesman with regulatory authorities, ensure international compatibility in order that roaming be without frontier, and support French vision in regard to European initiatives and regulatory bodies. AFIREV is more specifically working out Interoperability between IT systems of operators, the control of its efficiency and dependability, the contractual organization and standards; the naming scheme and attribution of identifiers to objects and actors implied, and the practical organization for their registration ; the economic efficiency of service roaming in order to be sustainable and at best cost for final customer ; the removal of possible legal obstacles.

About AVERE, the European Association for Electromobility

AVERE (The European Association for Electromobility) is the European association that promotes electromobility and sustainable transport across Europe. Its Members consist of National Associations supporting and encouraging the use of Electric Vehicles and electromobility across Europe. It has active members in 17 European countries, notably some of the most successful EV countries like Norway, France, The Netherlands and Belgium. Within these Associations, there are close to 1000 members, ranging from SME's, OEM's, and other companies with a commercial interest in electromobility. AVERE's network includes Users of Electric vehicles, NGOs, Associations, Interest Groups, Public Institutions, Research & Development Centres, Vehicle and Equipment Manufacturers and other relevant Companies. AVERE is the only European association representing and advocating for electromobility on behalf of industry, academia, and EV users at both EU and national levels. On top of advocacy, AVERE provides its members with a unique forum for exchanging knowledge, experience, and ideas on how to stimulate electromobility throughout Europe. Its task forces analyse the most important EV themes. They are engaged in European projects promoting sustainable transportation across the EU and we have often joined other international initiatives to support electromobility. The Association is a non-profit organization governed by the Belgium law.

About PFA, the French Automotive and mobility Platform

The Automotive Platform (PFA - Plateforme Automobile) brings together France's automotive industry. It has been chaired by former minister Luc Chatel since December 2017 and its governance is based on a presidents' council that consists of the heads of French carmakers and parts manufacturers (PSA, Renault, Valeo, Faurecia, Michelin and Plastic Omnium) as well as federations (CCFA, FIEV, FFC, FIM, GPA and SNCP). The PFA is the voice of the automotive industry and ensures, on its behalf, key missions in terms of innovation, competitiveness, employment and skills.

With the 4,000 companies that PFA federates throughout the nation, the industrial sector represents over 400,000 jobs in France, €155 billion in sales and 11% of the country's exports.

The automotive industry has become one of the main drivers of innovation in France, with €6 billion invested each year in R&D, and one in five companies filing a patent linked to the automotive sector.

About VEDECOM Institute

The VEDECOM Institute is a public-private partnership foundation for the Energy Transition (French ITE) dedicated to sustainable and innovative mobility, more environmentally-friendly, autonomous and with improved sharing. It is missioned by the French State to support technological innovation and French industry. Based on an unprecedented collaboration between 58 players, it gathers academic establishments, local authorities and private actors involved in mobility evolution: automotive, transport and mobility, logistics, road infrastructure, telecommunications, energy, aeronautics and defence, digital services and simulation, insurance. This trusted third-party central role helps its members to accelerate together innovation and the deployment of new solutions. Threw three multidisciplinary R&D axes - electrification, connected and automated vehicle, new mobility and energy solutions – VEDECOM brings a systemic vision of the vehicle, its environment and the deployment of new solutions. Created in 2014 as part of the "Investing in the Future Programme". VEDECOM is contributing to the "Self-driving Vehicle Plan" that forms part of the New Industrial France project (NFI). VEDECOM has 400 publications and 80 theses to its credit, as well as 2,500 persons trained as part of its training programme. With an annual budget of €30M, it has more than 200 employees.

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