

Future-proof management of Electric Vehicles charging points



Atos



Atos ecarga solution integrates the needs of all stakeholders involved in the electric vehicle value chain.

It combines a complete and open set of services that are ready to roll now with the flexibility to embrace technological innovation and future market needs.



Full power for Electric Vehicles

The electric vehicle (EV) has been a long time coming. But technological advances, rising oil prices and growing doubts about the sustainability of conventional fossil-fueled vehicles have combined to push the electric vehicle to the forefront of initiatives around the world to promote new approaches to urban mobility.

In its various forms - hybrid, plug-in hybrid and "pure-play" plug-in - the electric vehicle is poised to play a fundamental role in our evolution from fossil fuel-based transportation policies of yesteryear to smarter, more sustainable mobility strategies.

EVs offer lots of advantages. For people who live and work in today's polluted cities, the key selling points are the zero tailpipe emissions and low noise of EVs. For vehicle owners, EVs free them from the tyranny of gas prices and, as an added bonus, each time they press the "Start" button, they are helping the environment.

Even in countries that generate electricity mostly from fossil fuels, the higher efficiency means that the greenhouse emissions of an EV are much less than for a gasoline-powered equivalent. Owners or scheme

operators who are concerned about reducing their carbon footprint further can sign up for "100% renewable" tariffs.

EVs promote renewable energy in a less obvious way. Using electricity to charge EVs is a great way to utilize the surplus power generated by intermittent renewable sources. Already some utilities are offering EV owners time-of-use pricing to allow them to better match supply to demand cheaper charging rates at night, for example, when demand from other energy users is lowest.

To implement innovative EV tariff schemes requires IT systems that can access real-time data and predict user demand and not all charge point management systems are sufficiently "smart".

Far-reaching benefits

For municipalities and governments, the benefits of EVs are far-reaching.

That is because EVs promise to become an important instrument in helping today's traffic choked cities evolve into Smart Cities with sustainable mobility policies.

Some cities and employers have already introduced EV car-sharing schemes that if broadly adopted, could help reduce urban congestion and the strain on overloaded road infrastructure.

Many more cities already allow EV owners to park and recharge their EVs free of charge and enter streets that are off limits to gas-powered vehicles as a way to encourage EV uptake.

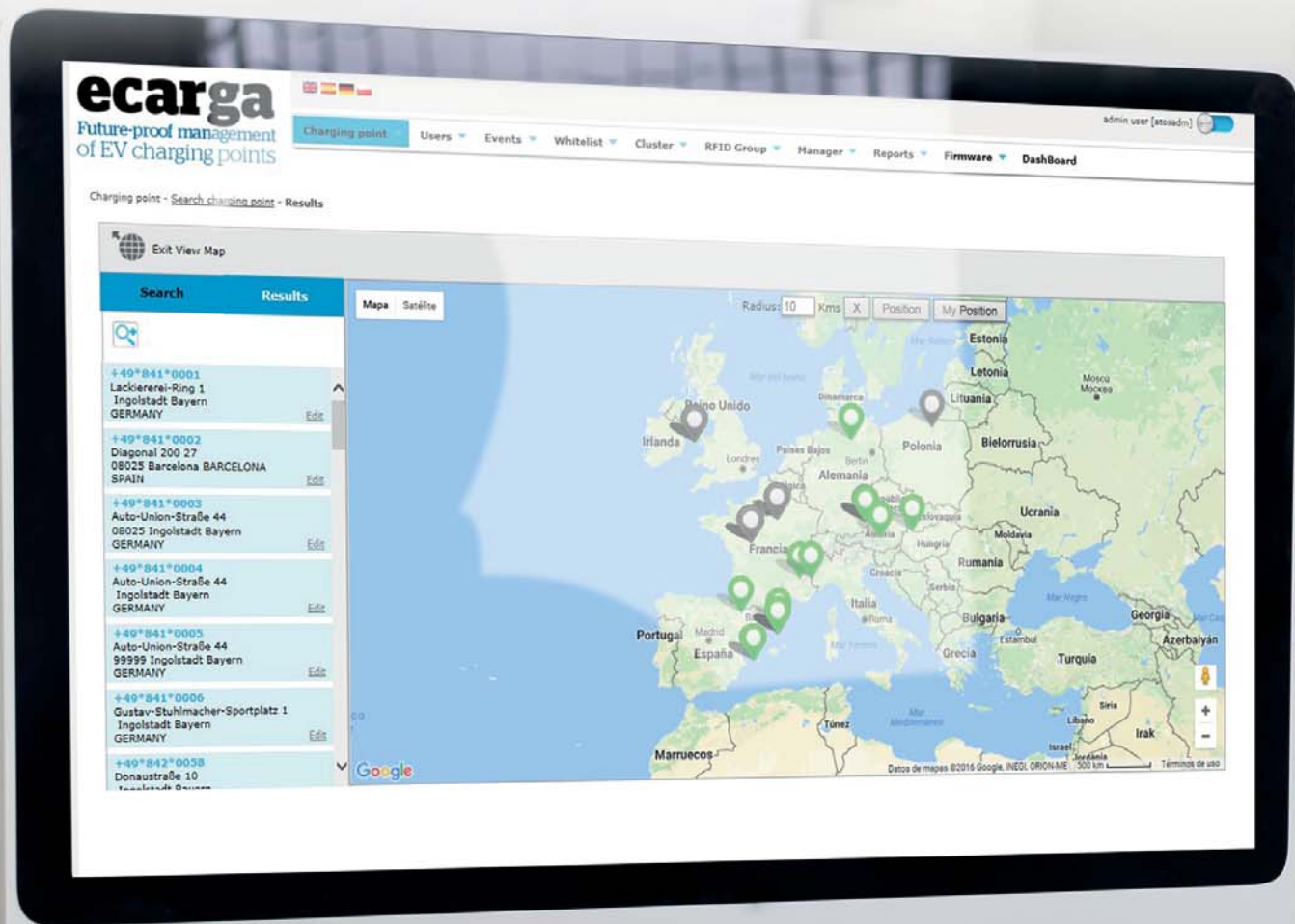
And we're not just talking about private cars. Delivery fleets are seen as a promising market for early EV adoption while electric scooters are already a common sight in some Chinese cities where gasoline-powered scooters have been banned.

EV projects are already playing a key role in helping reshape our understanding of urban mobility.

But to reap the full benefits, EV scheme operators will need sophisticated IT systems that go beyond charge point management as it is understood today and support a much richer range of mobility applications and services.

The Atos ecarga solution is ready for this challenge.

Electric vehicles charging station installations to reach 7.7m worldwide by 2017



Plugged in to the future

For EV uptake to expand, end-users must be convinced that EVs are as easy to refuel as a conventional vehicle. That requires EV scheme promoters to ensure they offer a fully joined-up charging infrastructure and one that is scalable and open to future evolution. The Atos ecarga solution has been designed to meet those exacting requirements.

The widespread deployment of EVs will require a significant investment in new infrastructure, the most obvious being the charging points network that will complement the existing network of gas stations. As EV uptake grows, so too will the demands placed on the public charging point infrastructure.

The Atos ecarga solution provides EV operators with an integrated suite of applications and interfaces to make it easier to manage their charging points and exchange information with users and stakeholders.

The most visible sign of any EV scheme is the charging point but it is only the tip of the iceberg. As well as the charging point hardware, EV schemes require investment in electrical infrastructure and communications networks to give the charging network its intelligence and resilience.

Sharing information and benefit

But most importantly, sophisticated IT systems are needed to capture and process demand information from the charging points. This information must be shared with various actors, such as DSOs, energy resellers, EV manufacturers and third-party service providers.

Interoperability is a key strength of ecarga and it will become increasingly important as EV schemes evolve to offer new services



demonstrators rather than as commercial initiatives. That is reflecting in their IT design, which is typically vendor-specific rather than based on open platforms.

Future-proof solution

For EV uptake to reach an inflexion point, schemes will increasingly need to use standard off-the-shelf technologies and open interfaces to ensure that they are not tied to the fortunes of a particular hardware supplier, software company or EV manufacturer. Technical standards in this area are just emerging. The EV business is still young and, inevitably, there will be casualties. So Atos has designed ecarga to be an open and truly technology-agnostic platform.

For EV scheme operators, that ensures business continuity if a technology is superseded or one of the links in the EV value chain fails.

ecarga makes extensive use of open protocols, which facilitates not just the design and implementation of the software but makes it easier for stakeholders, if they desire, to transfer operation and even ownership of the solution to a third party such as an IT service provider or outsourcer.

It also lends itself to delivery as a software-as-a-service solution (SaaS), for those who prefer a pay-as-you-go model or lack the time or resources to implement ecarga themselves.

such as demand response and automatic charging scheduling and high-level integration with business intelligence, CRM and ERP systems.

End-users themselves also want access to real-time information on the level of charge in their battery or the location of the nearest charging point, and so on. They also want to be able to plug their EV into charge points in other cities or even different countries. There are a growing number of EV schemes using public charging points around the world. But many of these schemes take a narrow focus and are conceived as technology



Utilities



Apartments



Parking



Municipalities



Retailers



Workplaces



Vehicle fleets

Future-proof architecture

The open architecture of Atos ecarga lets you effectively deploy and manage your EV project irrespective of the chosen technologies or suppliers. As well as managing the end points of the network, ecarga provides multiple levels of integration with other systems and stakeholders, so allowing raw data to be transformed into business intelligence and valuable information for end-users.

Atos has developed its ecarga solution to be as open and flexible as possible. This is done using a device abstraction API to hide the vendor-specific details of charging points, which helps avoid EV schemes getting "locked in" to proprietary closed solutions.

Because it has been designed from the ground up as a service-oriented architecture, ecarga simplifies interoperability with external systems.

An embedded enterprise service bus (ESB) intermediates all the interaction with external IT systems such as internal or third-party customer relationship management and enterprise resource planning systems.

The use of an ESB increases flexibility and makes it easier to modify the IT system as requirements change. It also means that your charging point solution can more easily scale up to handle the increased user base as more people join your scheme.

As well as the operator-focused benefits ecarga has been designed to provide a full range of services to other stakeholders, such as municipalities, utilities and, of course, end-users.

One of the biggest concerns for EV owners today is knowing the current charge status of their vehicle. ecarga gives EV owners the ability to check on the battery charge not just at the charging point but through a web portal or via a smartphone.

Because the customer-facing side of ecarga is directly linked to the charging points management module, end-users can see the nearest charging point displayed on an interactive map on their cell phone and reserve a time slot at the charging point before range anxiety takes hold.

The integrated modular design adopted for ecarga is the key to achieving the rich levels of functionality and flexibility.

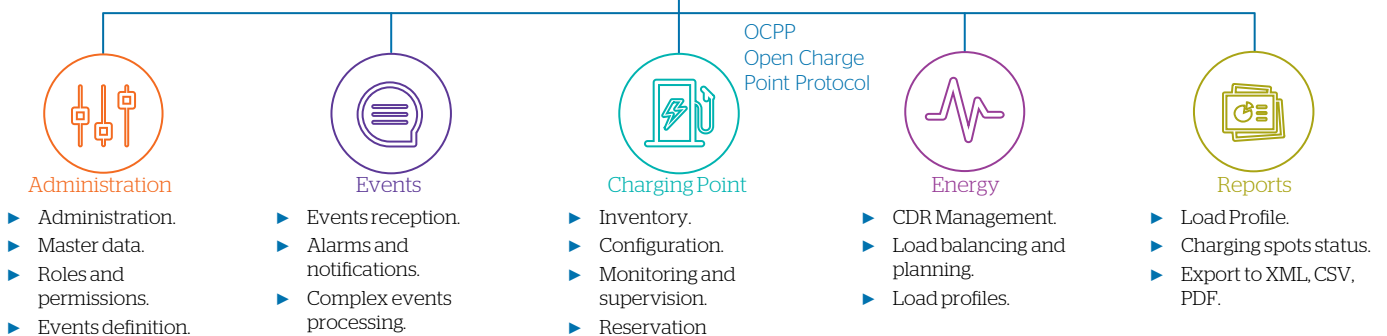
Atos ecarga supports open protocols for IT interoperability such as SOA, web services and XML, while higher-level information exchange can be achieved using emerging sector-specific standards such as the IEC 15188 specification for vehicle-to-grid (V2G) applications or Open Charge Point Protocol (OCPP) of which Atos is a member.

ecarga CPMS allows comprehensive management and operation of charging points.

ecarga solution



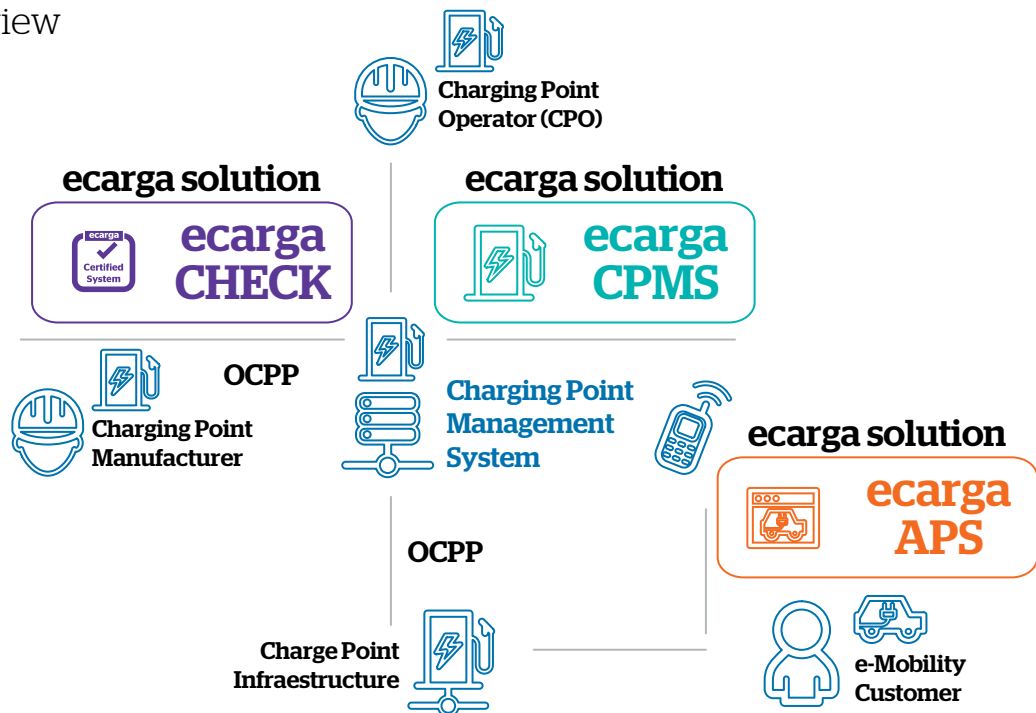
An Open solution implemented over standard tools and communication protocols with charging points (OCPP).



Your partner for success

Many IT vendors are trying to stake a claim in the EV market. Atos is one of the few with deep sector expertise and a proven track-record in solutions that bridge the gap between conventional IT systems integration and operations technology management.

Solution Overview



The technologies that underpin electric vehicle (EV) charging infrastructures are continuing to evolve as utilities and other key players in this ecosystem identify new business requirements and challenges associated with adding significant new demands on the electrical grid.

Against this uncertain backdrop, partnering with Atos offers two important benefits to EV scheme operators. First, we have no horse to back as regards technologies and standards, and so can offer a truly vendor-neutral approach.

Second, Atos has extensive experience in complex types of system integration project. It knows how to mitigate the uncertainty and “de-risk” complex projects by adopting an open architectural design and taking an

active “hands-on” approach to project management that seeks to rally the efforts and interests of multiple partners and suppliers around a common goal.

As well as more than 30 years of experience in the energy industry, Atos has a growing list of references specific to the EV sector.

For example, Atos has signed a far-reaching agreement involving ecarga with the municipal transport authority of Madrid.

The Spanish capital is seeking to promote sustainable mobility among its 3.3m inhabitants and has installed 280 EV charging points across the city within the framework of a nationwide EV program called Movele.

Atos implements and hosts ecarga on behalf of the transport authority.

As well as providing a full range of functions to manage users and charging points, ecarga also generates daily reports that show energy usage and real-time alerts if a point fails, for example.

A key aspect of the agreement is to hardware interoperability as the Madrid scheme uses charge points from various manufacturers but has standardized on OCPP protocol for data interchange.

Atos a proven partner for your EV project.

About Atos

Atos SE (Societas Europaea) is a leader in digital services with pro forma annual revenue of circa € 12 billion and circa 100,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation.

Find out more about us

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Let's start a discussion together



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