



Reducing the time-to-market



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Electromobility is picking up pace in Europe: according to the European Automobile Manufacturers' Association (ACEA), 878,000 new electric vehicles were registered in 2021 – up from 539,000 the previous year. But this increase in demand also requires the charging infrastructure to expand alongside – preferably as quickly as possible. Despite the fact that the number of charging points in the EU has significantly increased over the last five years (+180%), the total number (307,000) lags far behind the actual number required. A recent study from the ACEA shows that, by 2030, up to 6.8 million public charging points will be required in order to achieve the CO2 reduction target of 55% for cars – which means that, in fewer than ten years, the number of charging points needs to increase more than 22-fold.

Complex process

The above requires a fast time-to-market for new charging solutions – especially as this will enable charging infrastructure manufacturers to secure important market shares in this substantial growth phase. But developing a charging solution involves a lot of time and effort: in addition to the main components of performance level, charging controller, charging cable and connector, as well as the human-machine interface (HMI) required for operation, charging stations must cover an increasing range of functions. Smart charging solutions communicate bidirectionally with the electricity grid, which means they can connect the vehicle battery to the Smart Grid, for example. Modern payment and billing functions require access to relevant Cloud platforms. Plug & Charge according to ISO 15118 is also going to become increasingly important in future, as it makes the charging process much more convenient for the user: instead of having to obtain authorisation via an app or an RFID card, just plugging the charging cable into the car is sufficient. The vehicle identifies and authorises itself automatically at the charging station, which then initiates the charging process. More communication also means an increased need for cyber security and data security – which should ideally also be integrated from the initial design stage. This complex development process takes time – these days, one to two years on average, including the required certification and approvals.

Faster with preconfigured modules

However, there are ways of significantly reducing the development process. The easiest way is to use a white label solution, which is a charging solution from a third-party manufacturer,

but carries the company's brand name. However, this approach makes the respective company dependent on the third-party, including with respect to future upgrades. For manufacturers who would prefer to implement their own ideas and set themselves apart from the competition, there are preconfigured modules available from Avnet Abacus, EBV Elektronik and Avnet Embedded. This means that relevant solutions can be used to cover technologies or functions where additional expertise is required, or for which there is a lack of R&D resources. Avnet Abacus, EBV Elektronik and Avnet Embedded offer modules for almost all functions: from the charging controller with an integrated software package and preconfigured performance levels through to the HMI with an integrated payment and billing function.

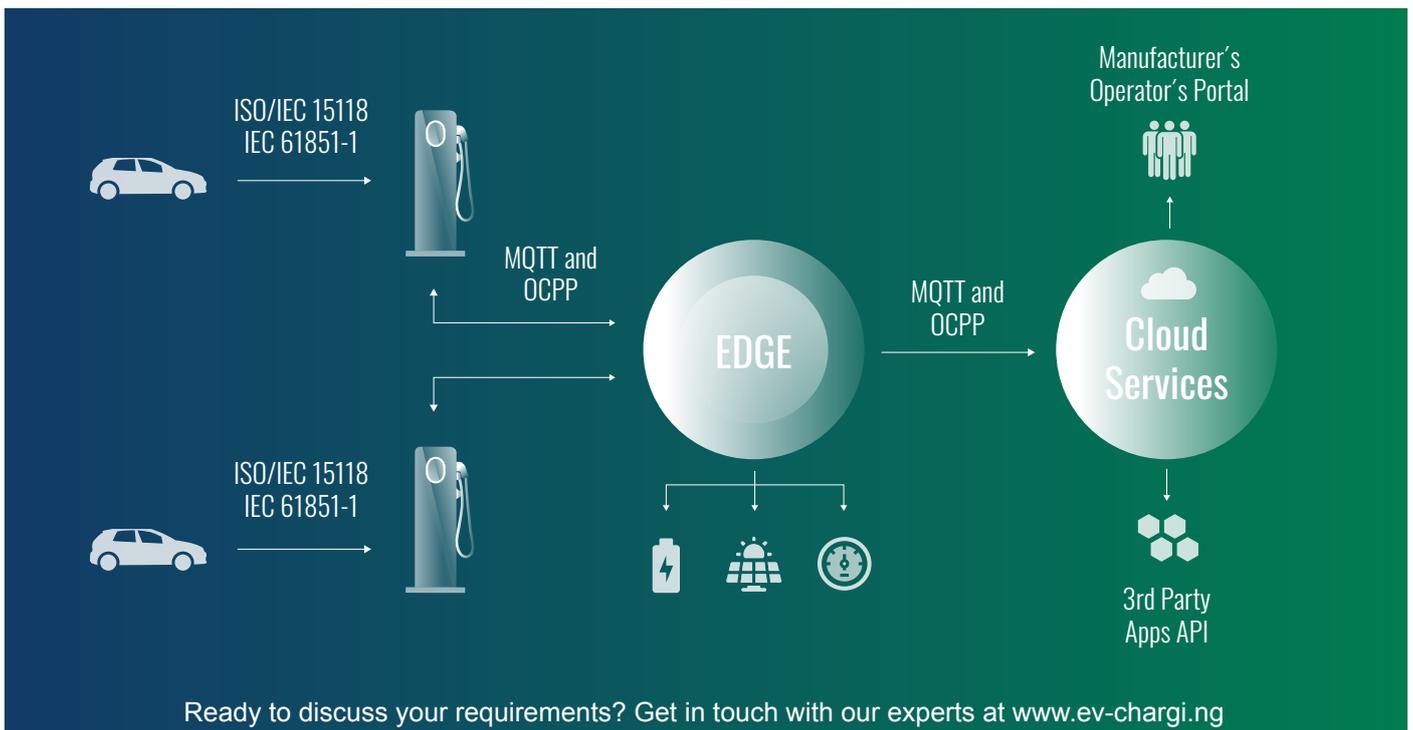
Fast integration of new technologies

Manufacturers can easily integrate new technologies, such as vehicle-to-grid, into their own product using turnkey solutions. All three companies have used their core technologies and their technical expertise in the development of the various modules. As a combined solutions provider, Avnet Abacus, EBV Elektronik and Avnet Embedded also develop bespoke customer solutions: for this, a standard computing module serves as a carrier board. The advantages: it is possible to switch between different CPU technologies with minimal impact on the hardware and software. This makes the solution resilient to supply problems with certain chips.

End-to-end solution

Avnet Abacus, EBV Elektronik and Avnet Embedded also act as a one-stop-shop for charging solutions. Their wide range of compatible systems in terms of software, connectivity, power topologies, connector technology, and passive and electromechanical components provides real added value for customers. Through collaboration with partner companies, they are able to offer integrated end-to-end solutions: special gateways enable the charging station to be integrated into the Cloud and they form the basis for the development of customer-focused services, which range from updates for charging station functions through to the integration of 3rd-party apps.

By using preconfigured standard modules, manufacturers can focus their R&D efforts on implementing creative ideas that will provide them with a USP. Another key advantage of using these preconfigured solutions is that it slightly reduces development time by three to six months.



Ready to discuss your requirements? Get in touch with our experts at www.ev-chargi.ng