

## CASE STUDY

### AN INNOVATIVE SOLUTION FOR AFIR-COMPLIANT EV CHARGING



#### ENOVATES

DRIVEN BY SMART E-MOBILITY

Enovates needed to update their EV charging infrastructure to comply with new regulations under AFIR—on a very tight timeline. ELATEC developed a novel firmware application to enable ad-hoc charging sessions via a secure payment method on their chargers, without digital displays or dynamic QR codes. Remote update capabilities will allow them to retroactively roll out an AFIR-compliant solution to their customers with minimal effort and disruption.

#### CHALLENGE

Enovates provides smart electric vehicle (EV) charging systems for B2B/B2G customers operating public or semi-public charging stations. Their e-mobility solutions include wall boxes, charging stations and management software for charging station operators and EV solution providers.

Based in Belgium, Enovates is the one-stop shop for pan-European AC charging. The Alternative Fuel Infrastructure Regulation (AFIR), which went into effect in April 2024, included new requirements for operators of public or semi-public charging stations in the EU.

#### BENEFITS

- + The solution brings Enovates and their charging station customers into compliance with AFIR requirements
- + Remote update capabilities enable Enovates to provide their customers with a solution that can be rolled out to their installed base with minimal effort and disruption
- + ELATEC was able to deliver the innovative solution in less than four months to meet

Charging stations now have to offer transparent and non-discriminatory pricing for users without a prior subscription. The obligation to install card terminals applies to newly installed charging stations with a charging capacity of 50 kW or more. A secure ad-hoc-payment process must be implemented for charging points with a charging capacity of less than 50 kW. This has significant implications for public and semi-public EV charging station operators, many of whom previously relied on static QR codes for payment processing. Dynamic QR codes, which are generated for each transaction to enhance security, have been proposed as a possible solution for charging points with a charging capacity of less than 50 kW. However, this solution can only be implemented with EV chargers that have a built-in display that can be used to present the dynamic code. That meant that chargers without a digital display would not be able to be used moving forward.

Enovates came to ELATEC in January 2024, asking for help in meeting the new requirements for their charging stations with an output of less than 50kW by the April 2024 deadline. With such a tight turnaround, ELATEC's software engineers had to act fast.

## REQUIREMENTS

Enovates needed an alternative solution for ad hoc charging that would bring their existing wall boxes and charging stations into compliance with AFIR requirements for ad-hoc charging. The solution had to work for chargers without a digital display. And it needed to be easy to roll out to existing customers without requiring costly replacement of installed readers or technician visits for updates.

"Enovates charging stations offer cutting-edge solutions for electric vehicle owners, ensuring seamless and efficient charging experiences. Integrating Elatec RFID readers enhances these stations by providing secure and versatile access control. This combination allows users to authenticate easily, manage billing accurately, and ensure that only authorized individuals can access the charging stations, thereby improving the overall user experience and operational efficiency."

**Steve Vancompennolle,**  
**Product Manager, Enovates**

## SOLUTION

To address the AFIR requirements, ELATEC worked hand-in-hand with Enovates to develop a novel solution that would meet their needs in the easiest and most cost-effective way possible. The engineering team developed an NFC-based dynamic payment link transfer that leverages the reader to open a payment website on the user's mobile phone.



ELATEC has worked with Enovates since 2018 and is one of their exclusive suppliers. Since 2022, they have used ELATEC's TWN4 MultiTech HF Mini for integration with their wall boxes; the reader's small size, low power consumption, price and flexibility met their needs perfectly. The reader can be easily integrated into the main circuit board for their chargers and supports all high-frequency radio-frequency identification (RFID) or near-field communication (NFC) transponder technologies. In addition, the powerful software development kit allowed them to write their own firmware so they could tailor the reader precisely to their needs.

The flexibility of the software development kit was the key to the new ad hoc payment solution. The reader firmware was updated to allow the reader to emulate an NFC tag, sending a signal to the user's smartphone to open the payment website. Users do not have to have a special app on their phone or an existing subscription to the charging

station. Anyone with an NFC-enabled smartphone can access the solution by simply bringing their phone within range of the reader. The payment website then opens on their phone, displaying current charging prices and instructions. Payment is also completed through the secure website. This solution meets AFIR requirements for ad-hoc charging access and pricing transparency, without requiring charging infrastructure to be updated with an expensive LCD display. It is also a much more secure solution than a QR code.

Critically, the solution can be rolled out for all Enovates customers via a remote update, eliminating the need to send technicians to the field. ELATEC is automating the rollout for Enovates and their customers to minimize the effort and disruption required to implement the AFIR-compliant solution.

“Enovates charging stations are engineered to provide superior charging solutions while ensuring compliance with the Alternative Fuels Infrastructure Regulation (AFIR),” explains Steve Vancompernelle, the Product Manager for Enovates. “By integrating RFID readers, these stations enable secure and efficient user authentication, facilitating ad hoc payment on public chargers as stipulated by AFIR. This ensures that users can access and pay for charging services seamlessly, enhancing convenience and accessibility for all electric vehicle owners.”

Enovates now uses the TWN4 MultiTech HF Mini in all their wall boxes and charging pillars. The flexible

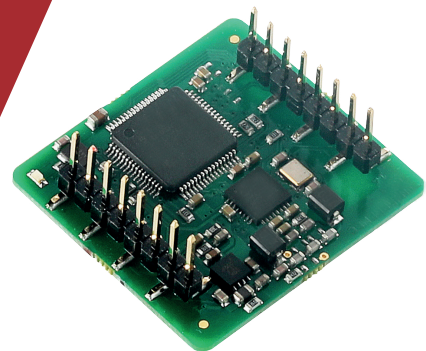


software development kit and remote upgrade capabilities ensure that they will be able to continue to evolve their solutions to meet new regulatory requirements as they emerge. Thanks to ELATEC's combination of hardware, software and service, they have a future-proof solution that will meet the needs of their customers for years to come.

**Want to know more about RFID for EV charging?  
Talk to our application experts.**

## ELATEC TWN4 MULTITECH HF MINI

A compact HF multi-technology reader designed for direct integration with the main circuit board. This versatile reader is built for small size, low power consumption, price and flexibility. Includes four user-configurable ports (input/output), beeper support and an integrated high-performance antenna. Supports all 13.56 MHz RFID/NFC technologies.



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