

Customer brief

# Electric Vehicle (EV) charging infrastructure

chargeBIG  
— powered by MAHLE

## Introduction

chargeBIG, a subsidiary of MAHLE group, is the developer and provider of a smart, centralized, scalable, and low-cost charging infrastructure for electric vehicles. They offer:

- A centralized and scalable charging infrastructure solution for day parkers, airports and fairs, employer car parks, and fleet operators.
- Grid-friendly and intelligent distribution of the available total power through dynamic and phase-individual load management.

“We at MAHLE chargeBIG strive to set up a backend system that is future-proof. It is not just about access control, metering, and billing, but also about predictive maintenance, flexible energy purchasing, and energy market control energy. AxonIQ provides the basis for that.”

- **Sebastian Ewert**, Founder & CEO of MAHLE chargeBIG GmbH

## Challenges

Due to German calibration law requirements, security and latency were very important topics. Data needs to move securely and quickly from charging infrastructure hardware to the Amazon Web Services (AWS) serverless hosted backend, and then to the metering progress screen on the consumer's smartphone.

With a tough timeline, Mahle chargeBig developed in parallel three smartphone apps, the charging infrastructure and relevant metering system components, and the backend. For the backend development in particular, they wanted to fulfill today's functional needs with room for future business models.

Axon Framework and Axon Server Enterprise allowed them to safely store all data, comply with General Data Protection Regulation (GDPR) requirements, and provide low latency, data security, redundancy, and global scalability.



# Solution

MAHLE chargeBig was looking for a modern and secure way to store all data and get a history of charging sessions. They used Axon Server and Axon Framework to get an event store that logs every event that occurs during a charging process.

Benefits of Axon Framework and Axon Server in this environment:

- Implemented end-to-end as a basis for full vehicle energy services
- The basis for further system improvements using “Big Data” in the future
- Enabled predictive maintenance for hardware components
- Allowed the system to provide more and better information to improve support to chargeBIG customers



**Build**

**Axon Framework**

Event Driven Microservices    Domain Driven Design    CQRS    Event Sourcing



**Run**

**Axon Server**

Routing    Event Store    Observability    High Availability

## Country

Germany

## Use cases

Electric vehicle charging infrastructure

## Featured AxonIQ products

- **Axon Framework**  
Framework for implementing DDD, CQRS, and Event Sourcing.
- **Axon Server Enterprise**  
Clustering, scalability, high availability, disaster recovery, data protection.

## Industry

Automotive

## Company size

Startup under the umbrella of Mahle, 70,000+ employees

## Related content

- **MAHLE**  
[www.mahle.com/en/products-and-services/emobility/chargebig/](http://www.mahle.com/en/products-and-services/emobility/chargebig/)
- **chargeBIG**  
[www.chargebig.com/en/](http://www.chargebig.com/en/)

# Contact us