



SMART E-MOBILITY CHALLENGE

SEAMLESS ACCESS: ENABLE THE ECONOMY OF THINGS

PROBLEM BEING SOLVED

Individual mobility dominates today's mobility, but it will be subject to major changes in the near future. Instead of developing purely technology-driven mobility concepts, the focus on economic, societal and customer-oriented fulfillment of needs is becoming more and more important. The autonomously driving cars will evolve into autonomously acting robot/cars, by authenticating themselves and making independent decisions. A consumer will therefore increasingly take less active part in the traffic, but rather enjoy comfort and spend the driving time useful, such as through sleep, reading or communication. This means the in-car experience will be the main focus for the user and the car has to interact with its environment autonomously. The vehicle must be able to do things by itself, without any human interaction - completely seamless. The first step in this direction is to enable a car (I-Pace) to self-authenticate itself to a parking facility with a barrier and to be billed in a minute-by-minute precision. As a result, the user is no longer forced to pull a ticket for the entrance and to pay through a vending machine, but the car can do this independently, seamlessly. It also enables the trustful interaction between the carpark operator and the driver/car in a transact-and-forget manner.

SOLUTION BEING PROVIDED

Siemens is leading in traffic infrastructure and safety management, while Bosch as one of the biggest mobility suppliers and both companies are leading partners of the mobility sector. A collaboration between Siemens and Bosch will result in new solutions, e.g. seamless integration between car and infrastructure.

TECHNOLOGY COMPONENTS

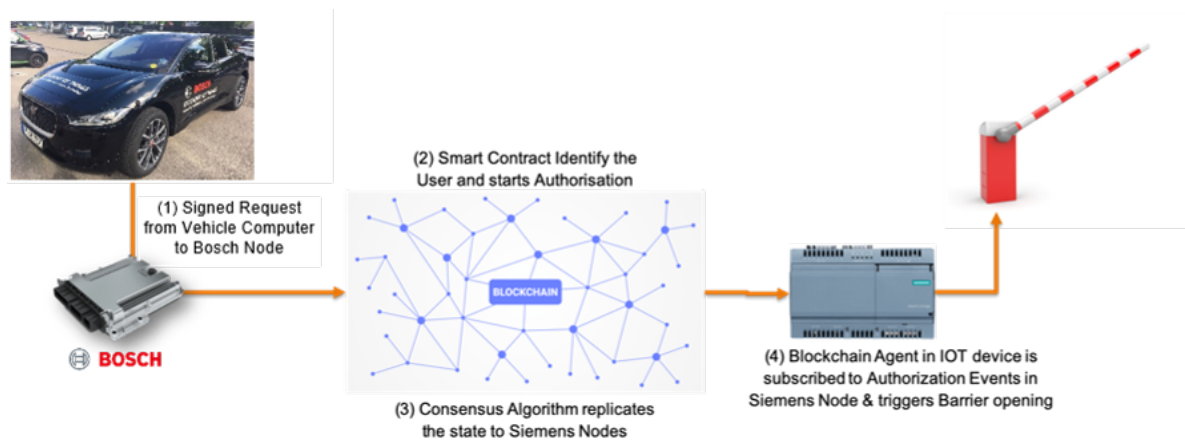
Based on the crypto chip in the vehicle computer of the car it has its own identity and knows its position. Based on this the car can send a signed transaction to the respective blockchain network. The smart contract will identify and authenticate the request from the car and emits an access-granted-event. The connected IoT enabled barrier subscribed to that event will open the gate the moment the event occurs.

BUSINESS VALUE

Facing the future of mobility, which will be strongly influenced by autonomy and electrification of vehicles, the increasing need for seamless interaction between vehicles and infrastructure will become a major technical challenge. It shows the need for the ability of all devices to interact with each other without the necessity of a human interaction.

A first approach to enable seamless integration is shown in our solution- the seamless access to parking areas. The result of the cooperation project between Siemens and Bosch shows the seamless, trusted parking access based on an automated machine-to-machine interaction between the car and the parking infrastructure stored on a distributed ledger to enable trustful and effortless mobility. It will also showcase the pay-and-forget model which is necessary for autonomous acting cars.

TIOTA SEAMLESS ACCESS USE-CASE



The car uses a crypto chip as a secure element to verify the identity. This allows the unambiguous identification with respect to a third, such as in the application of the park.

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