PEAKCHAIN

PeakChain Carsharing Platform on Cardano

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USt-IdNr. DE325978063/ Handelsregister-Nr.: HRB 30080

1. Introduction

1.1. Problem Statement:

Modern vehicles have become highly connected IoT (Internet of Things) devices requiring added security and data privacy. In this way, all vehicles are connected to centralized servers. But, despite this, there is no blockchain standard for the automobile industry.

1.2. Planned Solution:

Vehicles should, thus, be connected to the blockchain to guarantee privacy and security. We have chosen Cardano as a platform for building Connected Car DApps; moreover, we believe this platform should become the blockchain standard for the automobile industry.

1.3. PeakChain's proposed contribution to the solution:

1.3.1. Our Mission:

To establish Cardano as the blockchain standard for the automobile industry.

1.3.2. Our Vision:

To become the world-leading blockchain solution provider for the automobile industry based on the Cardano blockchain.

1.3.3. Our Plan:

We can accomplish these goals by:

- Building ready to use Connected Car DApps on top of Cardano.
- Demonstrating Cardano's suitability as a ready to use platform with these solutions.
- Promoting these solutions in the German and international markets.
- Innovating to develop two platforms on Cardano.
    - **First Project: PeakChain Carsharing Platform on Cardano**
        - Scope of the current proposal
        - Project Catalyst Fund 8
        - Campaign: DApps and Integration
    - **Second Project: PeakChain Fleet Management B2B Platform on Cardano**
        - Not in the scope of the current proposal
        - Project Catalyst Fund 8
        - Campaign: Business Solutions (B2B & B2C)
        - For further proposal details, please check the F8 Business Solutions (B2B & B2C) Campaign

2. Scope of the current proposal: PeakChain Carsharing Platform on Cardano:

We will develop and implement a Carsharing platform on Cardano. Thus, we are committed to delivering a new product increment with ready-to-go new features every three months.

2.1. Acceptance Criteria:

The Carsharing Platform consists of five components:

2.1.1. Acceptance criteria of the Hardware Component:

- Retrieve and decode data from the vehicle through dedicated hardware.
- Retrieve Vehicle Trip Data: speed, timestamp, engine RPM, and mileage.
- Once a trip is complete, the hardware sends vehicle data automatically to the processing server.
- No third-party applications are used in this process; in fact, the hardware is connected directly to the data processing services through a dedicated internet-enabled sim card.

2.1.2. Acceptance criteria of the Vehicle Data Decoding and Processing Server Component:

- Receive Trip Data uploaded from the vehicle.
- Decode Trip Data: speed, timestamp, engine RPM, and mileage.
- Upon customer confirmation of the trip ending, through a web application, and the customer returning the vehicle, the server is automatically triggered to process data to calculate the driving behavior and total driven distance.

2.1.3. Acceptance criteria of the Carsharing Smart Contract Component living in the blockchain:

- A smart contract is deployed to the blockchain.
- The smart contract is a peer-to-peer contract between the Carsharing Vehicle Wallet and the customer.
- The smart contract calculates costs using two parameters retrieved from the vehicle trip data: driving behavior and mileage.
- The Smart Contract transfers the funds automatically from the customer's wallet to the car wallet upon customer confirmation of the trip ending via the web application.

2.1.4. Acceptance criteria of the Car Wallet Component:

- A transaction will be triggered automatically from the car wallet once the customer confirms the end of the trip.
- This transaction generates vehicle trip data to send to the smart contract

2.1.5. Acceptance criteria of the Web Application Component:

- The customer can use the carsharing service after registration on the web app using their wallet.

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- The Web App checks the balance of the customer account. A minimal amount of ADA should be available in the customer wallet, prior to beginning to use the carsharing service.
- The Carsharing Manager can register a car to the service using the Web App and the car wallet.
- The customer can begin or end a trip using the web app.
- The customer can check the history of each trip through the web app.

2.1.6. Short term Carsharing Platform Architecture:

As described above, the platform consists of five components, including the PeakChain Server. Please find below the designed short-term platform architecture.

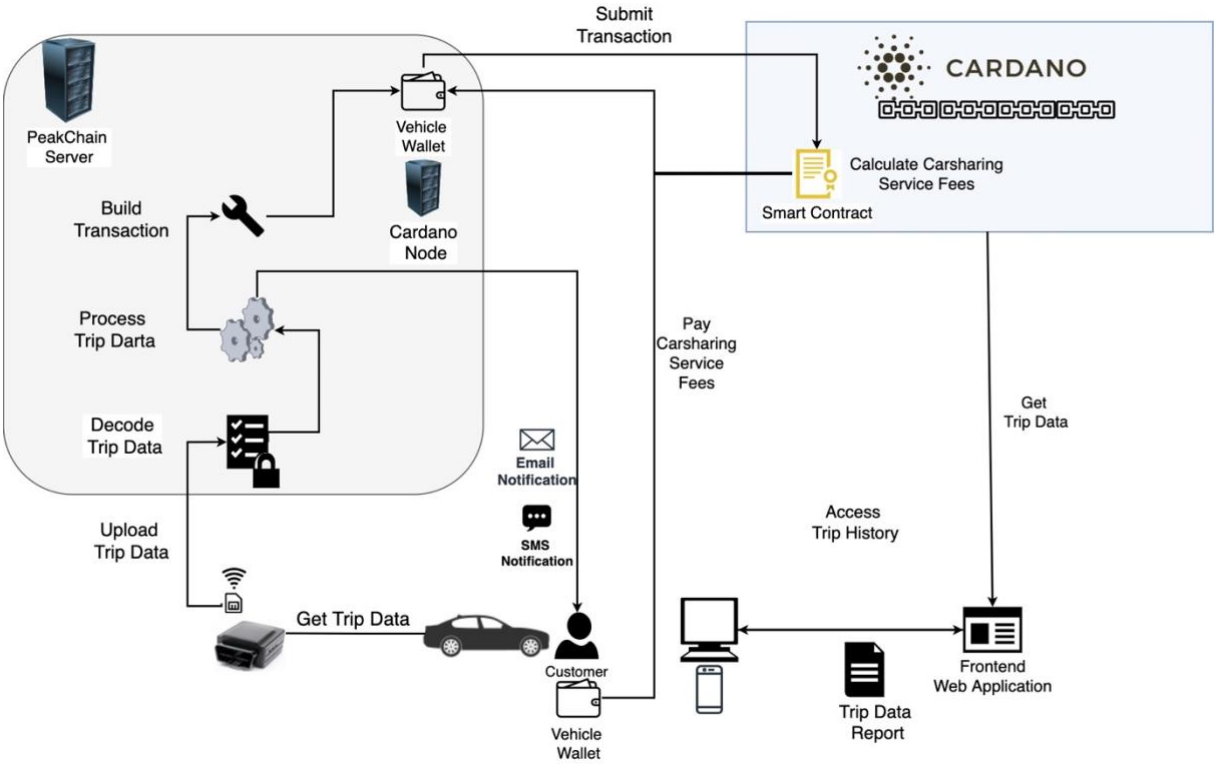

Figure 1: Short-term Carsharing Platform Architecture

2.1.7. Mid-term Carsharing Platform Architecture:

Our goal is to deliver a fully decentralized solution. We are planning in the mid-term to build a car hardware wallet, which communicates directly to the blockchain. Decoding and processing data should also be realized by this hardware.

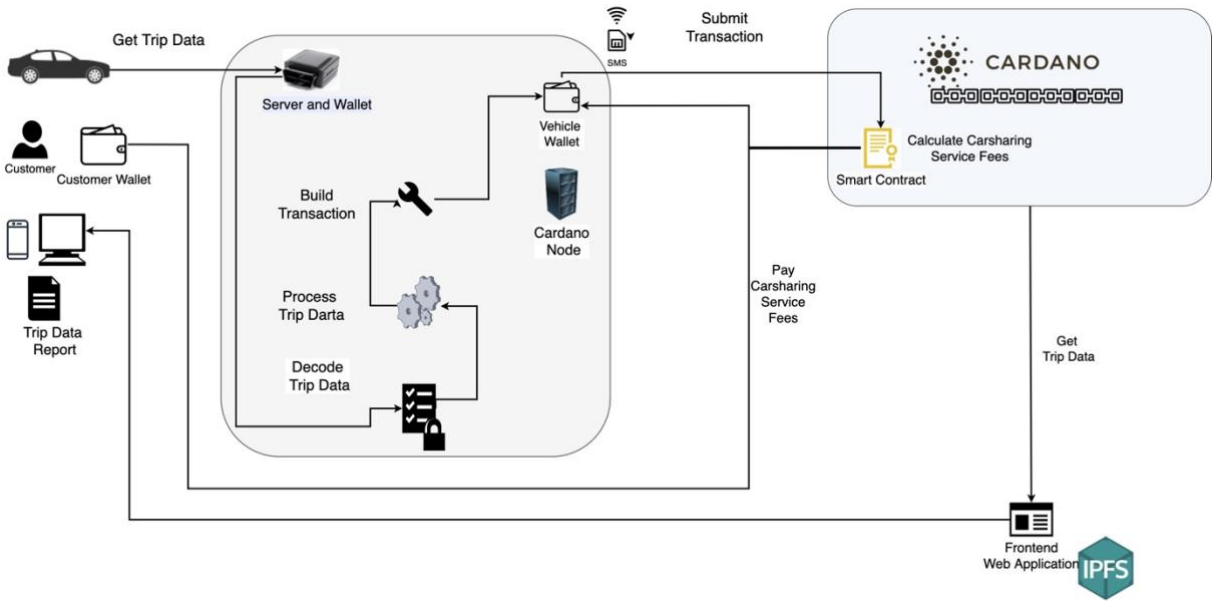

Figure 2: Short-term Carsharing Platform Architecture

3. Feasibility of the project:

To prove the feasibility of the project, we will describe our technical and management know-how, and we will present an already implemented prototype

3.1. Technical and Management expertise:

We have the technical and management competencies to fully scale our operations, delivering an innovative solution. Please refer to the Sections:

- ***5.3 High Qualified Team***
- ***8. PeakChain Team***

3.2. Deployed Prototype:

To prove the technical feasibility of our project, we are working on a prototype. Most components are implemented and tested successfully.
This prototype will serve as the essential infrastructure for both proposed projects.

3.2.1. Hardware Component:

- We have implemented the prototype using a Volkswagen Passat as a testing vehicle.
- We have chosen hardware that communicates to our VW Passat through the OBD2 Port. This port standard in the automobile industry for retrieving car data from the CAN Bus System.
- The hardware retrieves the CAN Bus data from our Testing Car successfully, including vehicle speed, engine RPM, and trip timestamp, and transmits it automatically to the Processing server once a trip ends.
- The hardware is successfully and securely connected to our server through the internet using a dedicated sim.
- Our VW Passat Testing Car connects to our servers and transmits CAN Bus data automatically after each trip using no third-party software or human interaction.

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3.2.2. Vehicle Data Decoding and Processing Server Component:

A server dedicated to decoding and processing vehicle data is set up, successfully communicating with our VW Passat testing car.
Once encoded car data are uploaded, a script is triggered automatically to run and decode speed, engine RPM and timestamp trip data.

3.2.3. Car Wallet Component:

A Cardano-node is running on our server, in turn opening the option to create a wallet. In this way, transactions could be easily triggered based on decoded speed data received from

4. Our Strategy:

The proposed Strategy entails:

4.1. Trust:

- Our expert team has significant experience, working on Connected Car Projects in the automobile industry for extensive periods.
- We are a transparent legal entity, a company called PeakSoft GmbH based in Wuppertal, Germany. For many years, we have been dedicated to delivering software development and software quality/test automation solutions.
- For more information, please refer to section **7 " An overview of PeakSoft GmbH, the company forming PeakChain".**

4.2. Short Time to Market:

Our Strategy is to build and deliver high-tech, effective solutions through an incremental agile process.

4.3. "Highly" Prioritizing Quality:

Short time to market doesn't mean delivering features and hindering quality. We are ISTQB Certified, offering outstanding experience in software quality assurance and test automation. Consequently, quality will be our main focus.

5. How PeakChain will achieve that Vision:

5.1. We are Cardano believers and contributors:

- We actively contribute to the Cardano network and its decentralization and governance. Through our efforts, we have launched our Cardano Staking Pool: **PeakChain Pool [PKCP**]. For more information, please refer to the section, ***"11. How could you support us***".
- We constantly learn and contribute to the Plutus Developer Community. We are indeed Plutus Pioneers.
- We are obviously ADA hodlers.

5.2. Company Credentials:

- We are a legal entity (company) based in Germany called PeakSoft GmbH. For more information, please refer to the section, **"7. An overview of PeakSoft GmbH, the company forming PeakChain"**

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- We build our products in Germany, which is a world-leader for the automobile industry, helping us facilitate building collaborations with the automobile industry.

5.3. A Highly Qualified Team, offering:

- Significant experience in connected car projects through collaborating with the world-leading automobile car maker.
- We have robust software engineering experience.
- Excellent project management experience: our project manager is PMP Certified as well as Scrum Certifications.
- With distinguished software quality and test automation experience, we are ISTQB certified.
- We speak four languages: English, German, French and Arabic.

6. Why we have chosen Cardano:

We have chosen Cardano because we believe it is by far the best Smart Contract Blockchain. After all, Cardano:

- is the most decentralized Smart Contract Blockchain available.
- is built with the most capabilities to scale and could be used effectively in the industry as an alternative to centralized solutions.
- is developed with solid research and quality-oriented approaches.
- is an open platform supported by one of the biggest and strongest communities in the crypto space.
- has the most robust governance approach in the crypto space.

7. An overview of PeakSoft GmbH, the company forming PeakChain:

- PeakSoft GmbH is based in Wuppertal in Germany. The company was founded in 2019 by Oussama Benmahmoud, Software Quality Specialist, and Abderrahim Issaoui, a Software Engineer.
- We deliver Software Web Development and Software Quality Consulting Services.
- For more information, please visit our website: www.peak-soft.de
- You can find our company's legal information by visiting: https://peak-soft.de/impressum/

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8. PeakChain Team:

Below is a list of all employees of PeakSoft GmbH. All team members are living and working in Germany:

- **Oussama Benmahmoud**
- **CEO and Co-Founder of PeakSoft GmbH**
- Industrial Engineer
- Project Management and Software Quality Assurance
- Experience in Connected Car Projects by Volkswagen
- Plutus Pioneer
- **LinkedIn**: https://www.linkedin.com/in/oussama-benmahmoud-43693926/
- **Twitter**: @Oussbenma

- **Abderrahim Issaoui**
- CTO and Co-Founder of PeakSoft GmbH
- Software Engineer
- Experience as Lead Frontend Developer
- Plutus Pioneer
- LinkedIn: https://www.linkedin.com/in/abderrahim-issaoui-b3149227/
- **Twitter**: @AbderrahimAiss

- **Habib Mokni**
- Software Engineer
- Frontend Developer
- **Linkedin**: https://www.linkedin.com/in/habibmokni/

- **Mohammed Abdelali**
- Electronic and Communication Engineer
- Software Quality Assurance Specialist
- Experience in Connected Car Projects by Volkswagen
- **Linkedin**: https://www.linkedin.com/in/mohammed-abdelali-290b7b101/

- **Neyla Issaoui**
- Project Management Office
- Responsible for Administration, Accounting and Coordination Tasks
- **LinkedIn**: https://www.linkedin.com/in/neyla-issaoui-266534199/

- **Ramla Mahjoub**
- Project Management Office
- Responsible for Administration, Accounting and Coordination Tasks
- **LinkedIn:** https://www.linkedin.com/in/ramla-mahjoub-25a1843b/
- **Twitter**: @Ramla28574924

9. Project Roles:

9.1. Project Manager:

- Oussama Benmahmoud
  - Certified Project Management Professional (PMP)®
  - Certified ITIL® - IT Service Management - Foundation Level
  - Certified Professional Scrum Master™ I (PSM I)
  - Certified Professional Scrum Master™ I (PSM I)

9.2. Plutus Blockchain Development:

- Abderrahim Issaoui
  - Plutus Pioneer
- Oussama Benmahmoud
  - Plutus Pioneer

9.3. Frontend Development:

- Abderrahim Issaoui
  - Lead Frontend Engineer
  - Long Experience in Software Development Projects
- **Habib Mokni**
  - Frontend Engineer

9.4. Connected Car Hardware Components and integration:

- Mohammed Abdelali
  - Experience in Connected Car Projects with Volkswagen
- Oussama Benmahmoud
  - Experience in Connected Car Projects with Volkswagen

9.5. Software Quality Assurance:

- Mohammed Abdelali:
  - Long experience in Software Quality Assurance
  - Certified ISTQB Foundation Level

- Oussama Benmahmoud
  - Long experience in Software Quality Assurance
  - Certified
    - ISTQB Foundation Level
    - ISTQB® Certified Tester – Foundation Level, Extension Agile Tester
    - ISTQB® Certified Tester – Advanced Level – Test Analyst
    - ISTQB® Certified Tester – Advanced Level – Technical Test Analyst

9.6. Administration, Accounting and Coordination Tasks:

- Neyla Issaoui
- Ramla Mahjoub

10. Proposal Costs:

- The length of the first increment is three months.
- On a full-time basis, we will work in parallel on two projects, the Fleet Management Platform Development Project, and Carsharing Platform Development Project, because they utilize similar architecture and infrastructure. For more information, please refer to section **1.3.3 "Our Plan":**
- We will calculate the budget using a 50% Daily Workload for each Project Role.
- We should consider that the entire team is based in Germany, receiving their pay from our company PeakSoft GmbH.
- Employer Costs in Germany are relatively high compared to other countries. Please consider the same when evaluating the proposal.
- We calculate conservative costs compared to actual employer costs with similar experience in Germany.

- **Estimated <u>Monthly</u> Budget**

Name	Role	Budget in Euro	Budget in Dollars
Oussama Benmahmoud	Manager and Plutus Developer	2.500	2.800
Abderrahim Issaoui	Frontend Engineer and Plutus Developer	2.500	2.800
Habib Mokni	Frontend Developer	2.000	2.200
Mohammed Abdelali	Car Hardware Integration and Quality Assurance	2.250	2.500
Neyla Issaoui Ramla Mahjoub	Administration, Accounting and Coordination Tasks	2500	2.800
	Total monthly budget	**11.750 Euro monthly**	**13.100 Dollars monthly**

- **Total Budget:**

The total budget for the current proposal, considering a **<u>three-month</u>** delivery time, is **39.300 Dollars**.

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11. How could you support us:

- Support our proposal in catalyst fund8.
- Delegate to our Staking Pool "PeakChain Pool". Please refer to the section, "PeakChain Pool" for more information.
- Share our projects and articles on your social media.
- Provide us with honest feedback.

12. Important Note:

- **We have NOT issued Tokens and NFTs, and we are NOT selling any digital assets.**
- **We are NOT organizing any campaigns like Airdrops or Giveaways.**
- **We are NOT asking for any funds of any type from the community.**
- **We are asking for funds EXCLUSIVELY through project catalyst.**

Unfortunately, the crypto space is overwhelmed with spam. It is vital that you remain aware of spam. Also, people may try to impersonate us by selling tokens or creating Giveaway or Airdrop campaigns.

Although this is our official position at the moment, if this Strategy changes, it will be discussed and decided alongside the Cardano community and communicated via PeakChain's official channels.

If you detect any suspicious activities or spam from people claiming to be from our brand, please contact us at contact@peak-soft.de
PeakSoft GmbH, the company behind the PeakChain brand, is a legal entity registered in Wuppertal, Germany. With that said, we reserve the right to pursue legal action against anyone that tries to spam the community or spread defamatory or incorrect information about the PeakChain brand.

13. Contact:

If you have questions, you can contact us via email at contact@peak-soft.de

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