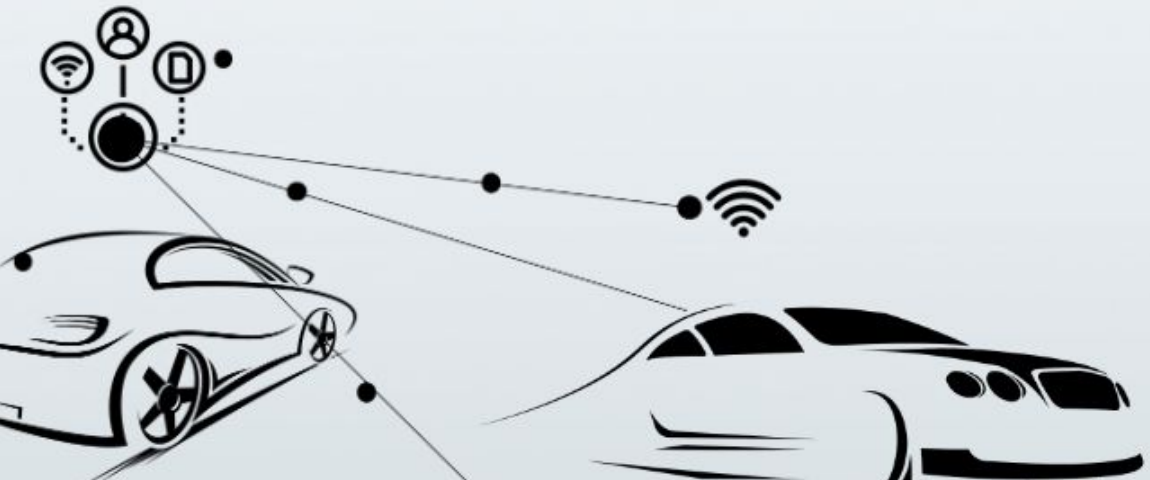
Bringing Hyperconnectivity to Hypercars with MQTT and Kafka

A Webinar With RIMAC TECHNOLOGY HIVEMQ

Hosted By

MOBEX



Speakers

Luka Špoljarić
Software Development Team Lead,
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Gaurav Suman
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HiveMQ

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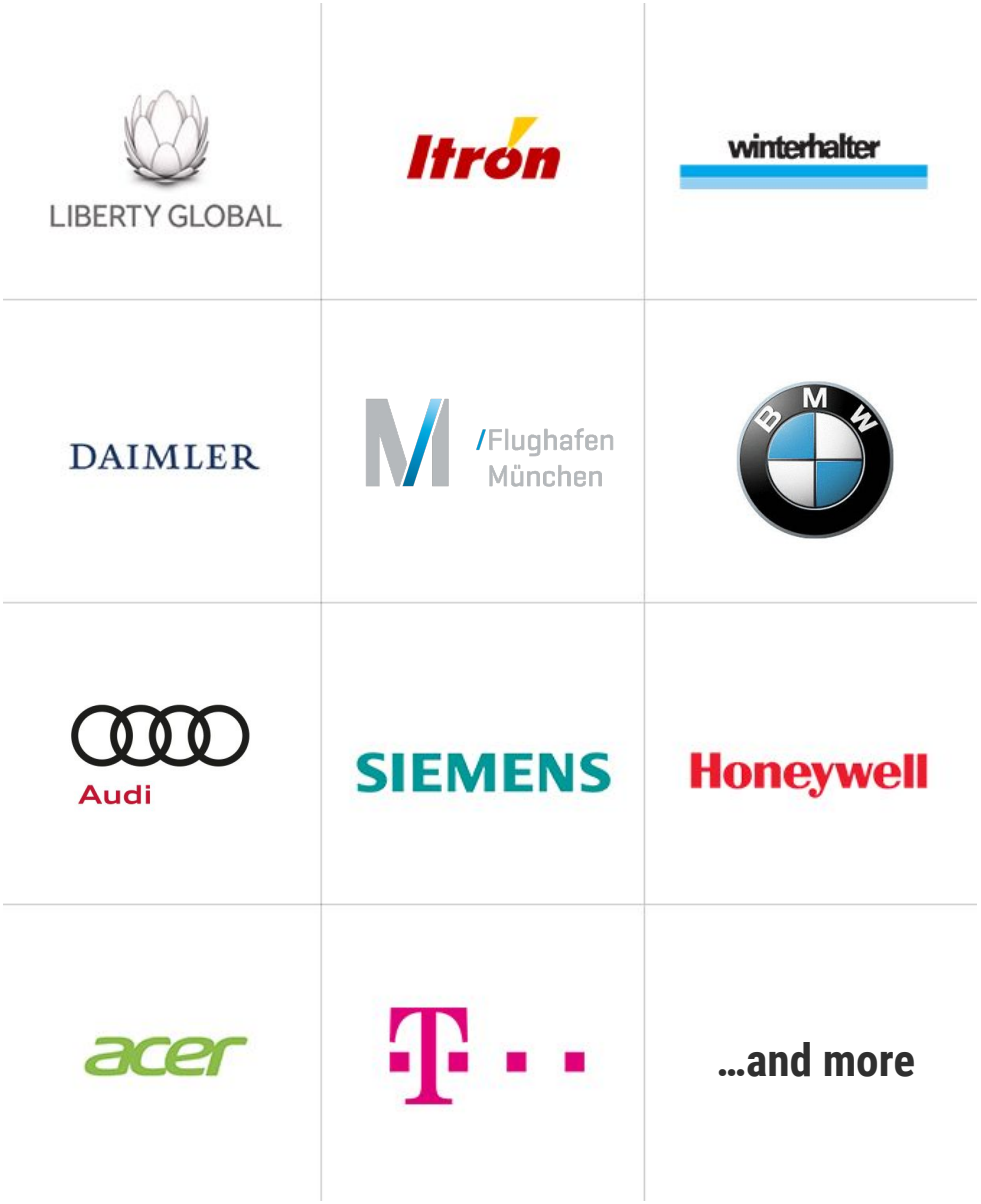
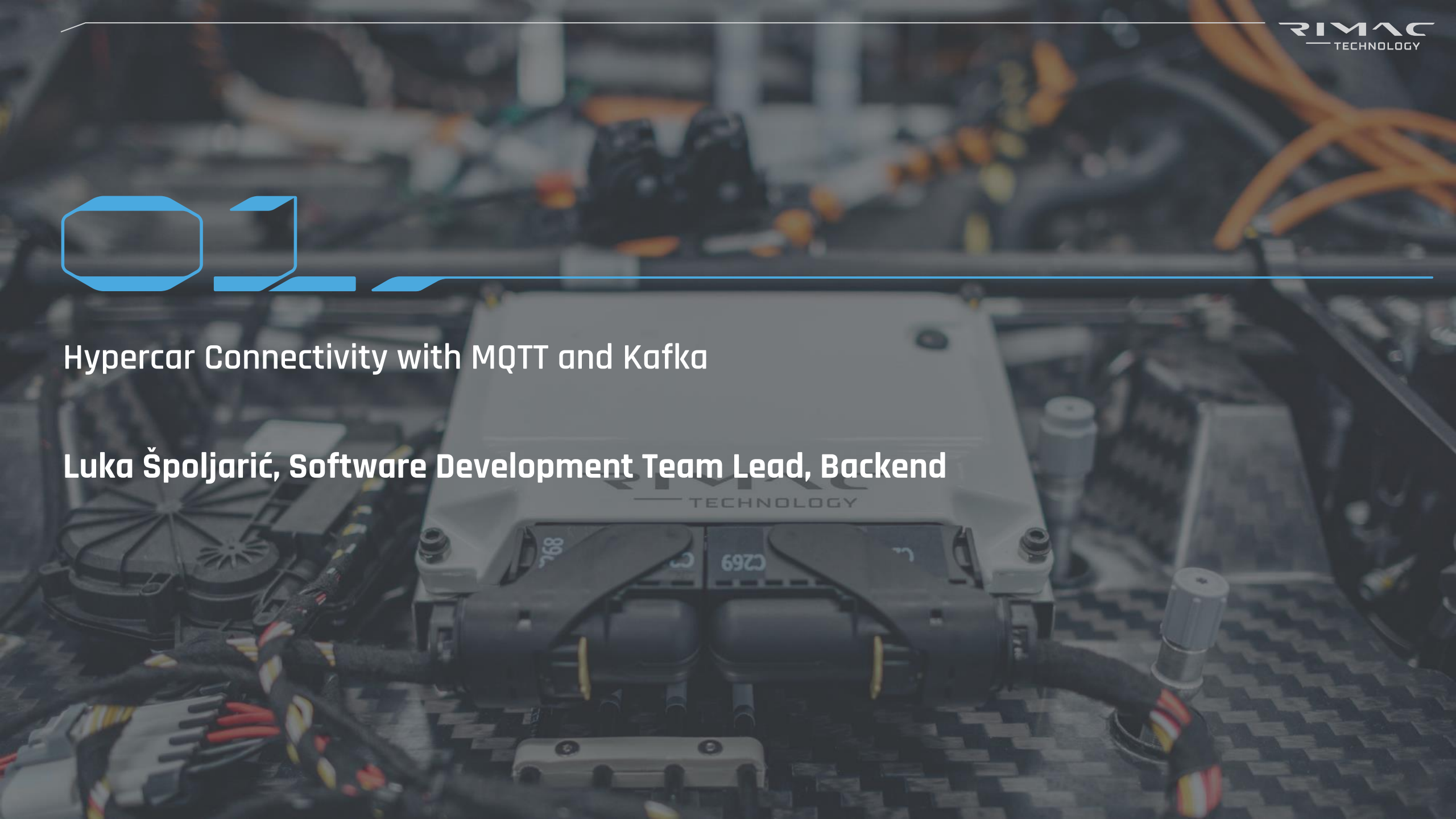
Introduction to HiveMQ

- **A global company founded in 2012** and headquartered in **Landshut, Germany.**
- OEMs and Tier 1 suppliers rely on HiveMQ to create reliable connected car services that enhance the driving experience and create new revenue opportunities.
- **130+ customers** trust our solution for reliable data exchange to and from end-points to the cloud and the edge.
- Raised **€49.3 million** in seed and series A funding

Our customers are…

- Building new digital products
- Improving customer experience
- Creating efficiencies
- Discovering insights





01

Hypercar Connectivity with MQTT and Kafka

Luka Špoljarić, Software Development Team Lead, Backend

Presentation Goals:

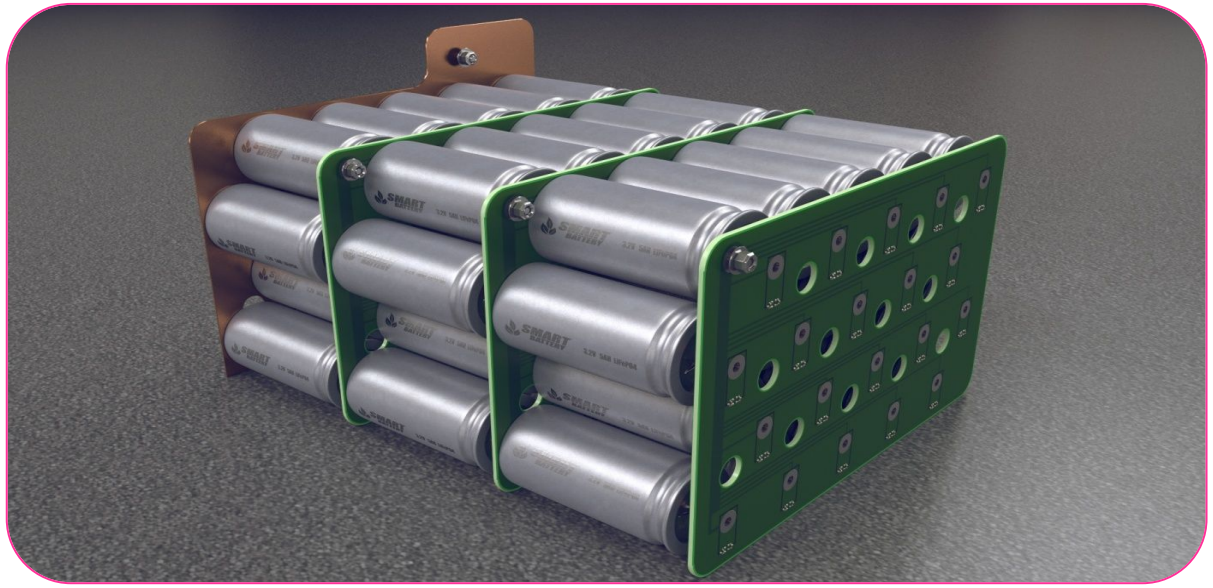
- **Expand Rimac Technology presence as a software powerhouse,**
- **What are we trying to build,**
- **How are we trying to achieve it using MQTT/Kafka and other technologies.**

02

Rimac Technology

Hypercars

Battery Systems



Electric Control Units

INV_1000

Battery Management Systems

DC/DC Converter

OBC_22

PDM_001

ECU_200 Family

Software

- Typescript
- NodeJS
- GraphQL
- Scala
- AWS
- MQTT
- Kafka

What are we building ?

02

Connectivity Platform

- Two-way communication between vehicle and cloud system,
- API's to retrieve data sent by the vehicle,
- API's manipulate vehicle and its configuration.

Rimac Connectivity Platform

RIMAC TECHNOLOGY

CONNECTIVITY PLATFORM

CUSTOM API

ALECS & RED Platforms

OEM Dashboard

Aftersales Platform

OTA Update

Mobile App

What problems are we solving ?

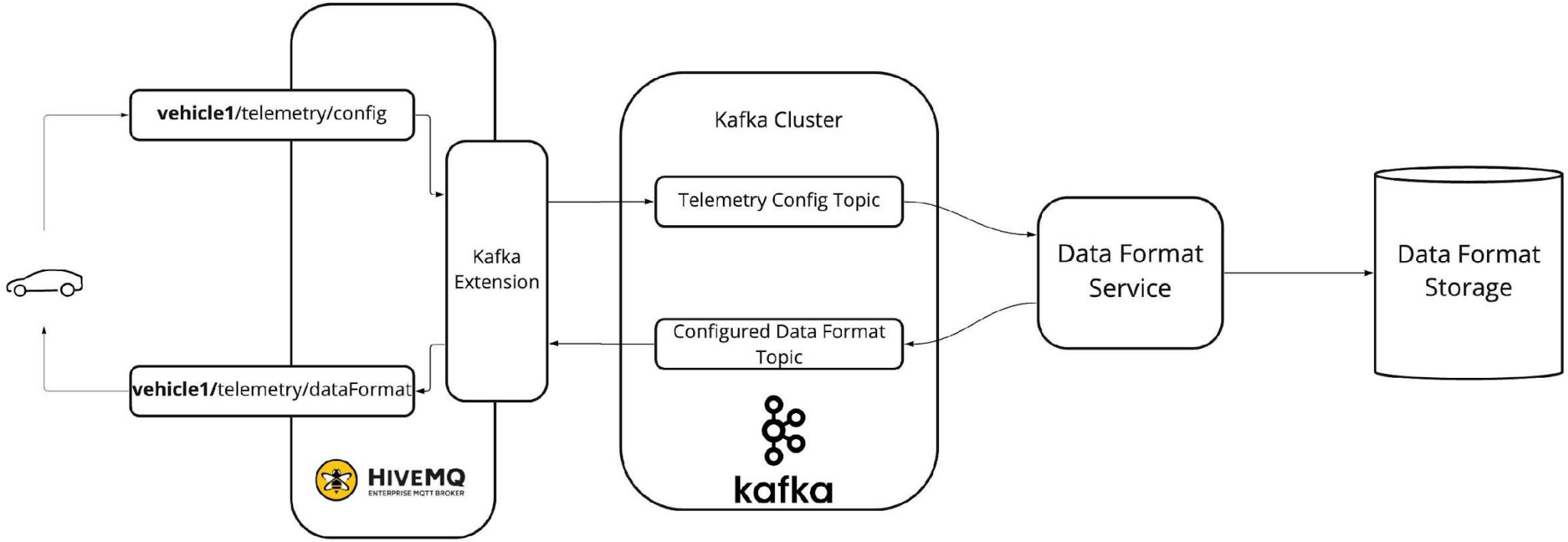
- **Connect the vehicle to a Cloud System,**
- **Configure telemetry data options,**
  - What data should the vehicle send?
  - With what frequency.
- **Receive Remote Commands sent by the Cloud System**
- **Upload Telemetry data in near live time,**
- **Fault tolerant to data loss.**
- **Receive OTA Software Updates sent by the Cloud System**

How are we building it ?

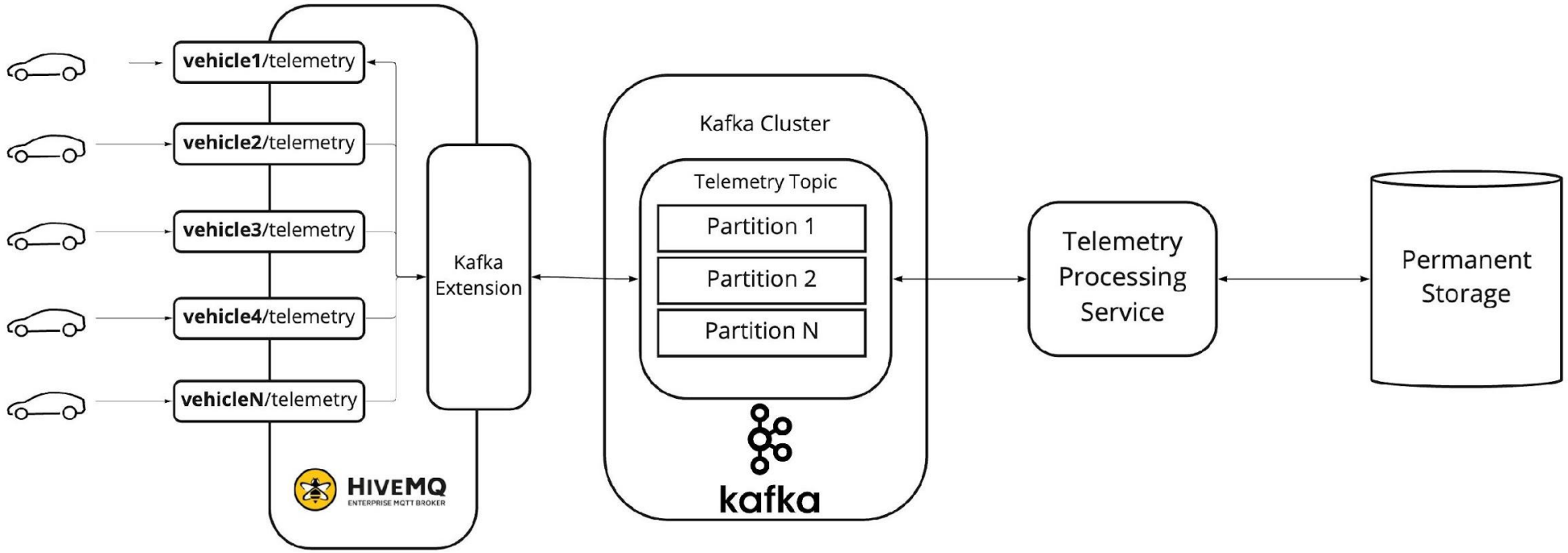
- Lightweight and efficient
- Bi-directional communication
- Scale up to millions of ‘things’
- Reliable message delivery
- Fault tolerant
- Support for Unreliable Networks

- Highly scalable
- High throughput
- Fault tolerant
- Distributed
- High Concurrency

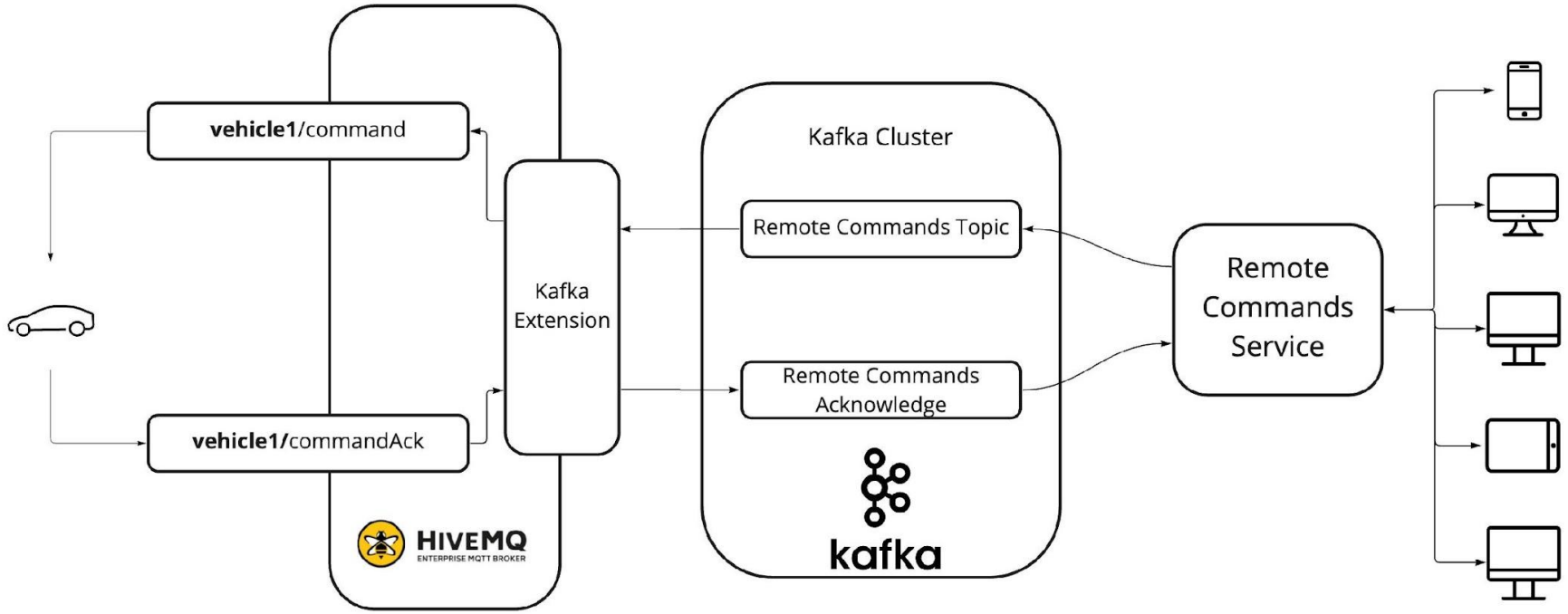
Configure telemetry options



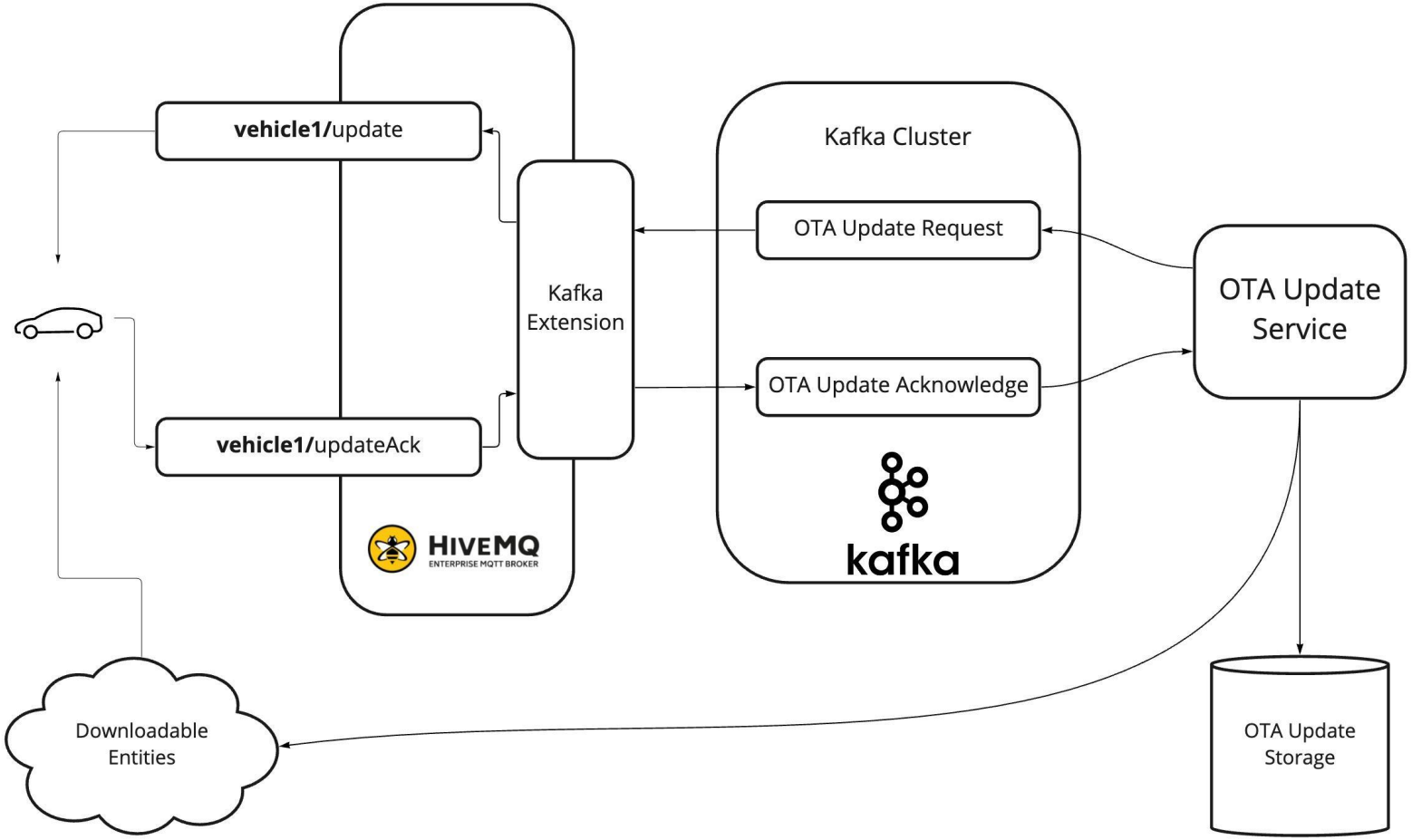
Upload Telemetry Data



Receive Remote Commands



Receive OTA Software Updates



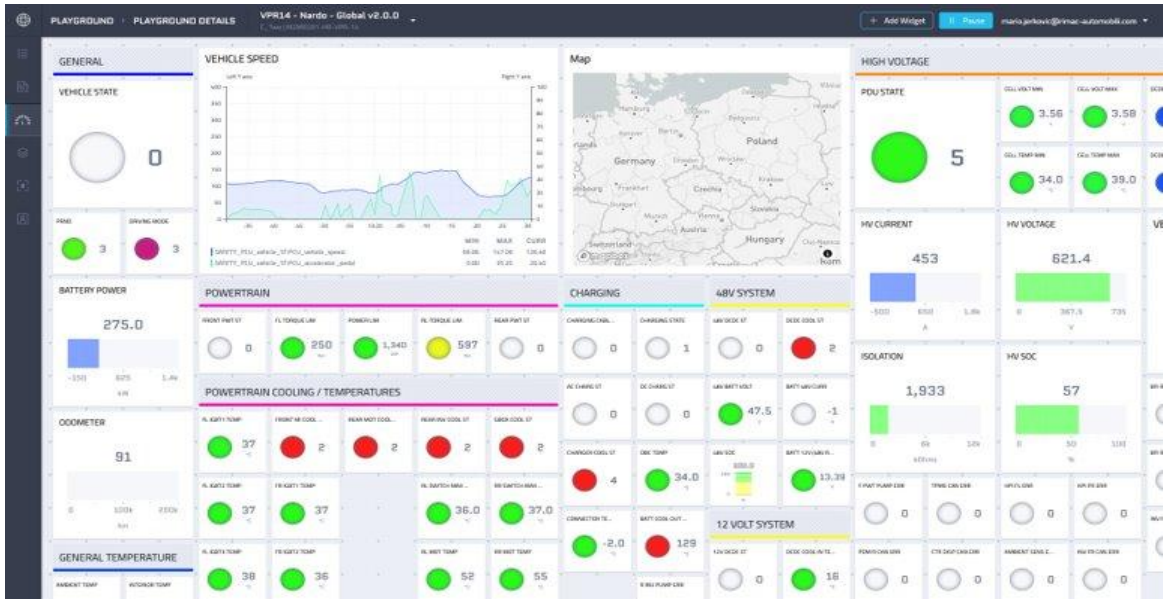
What can be built using this?

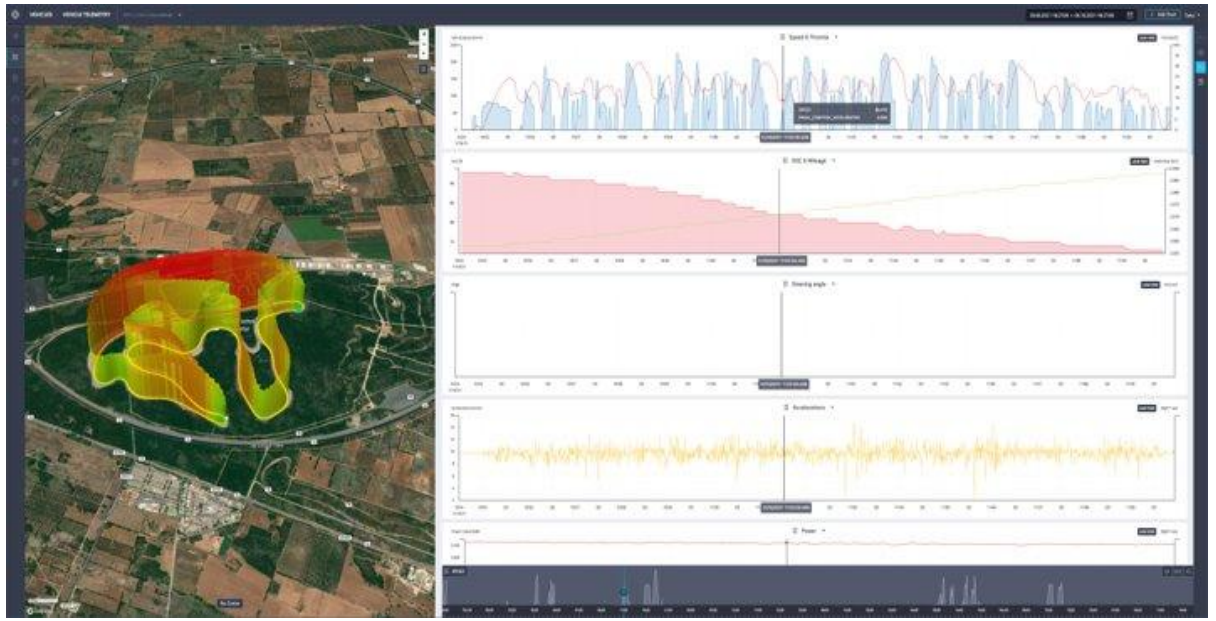
Connectivity Platform Client:

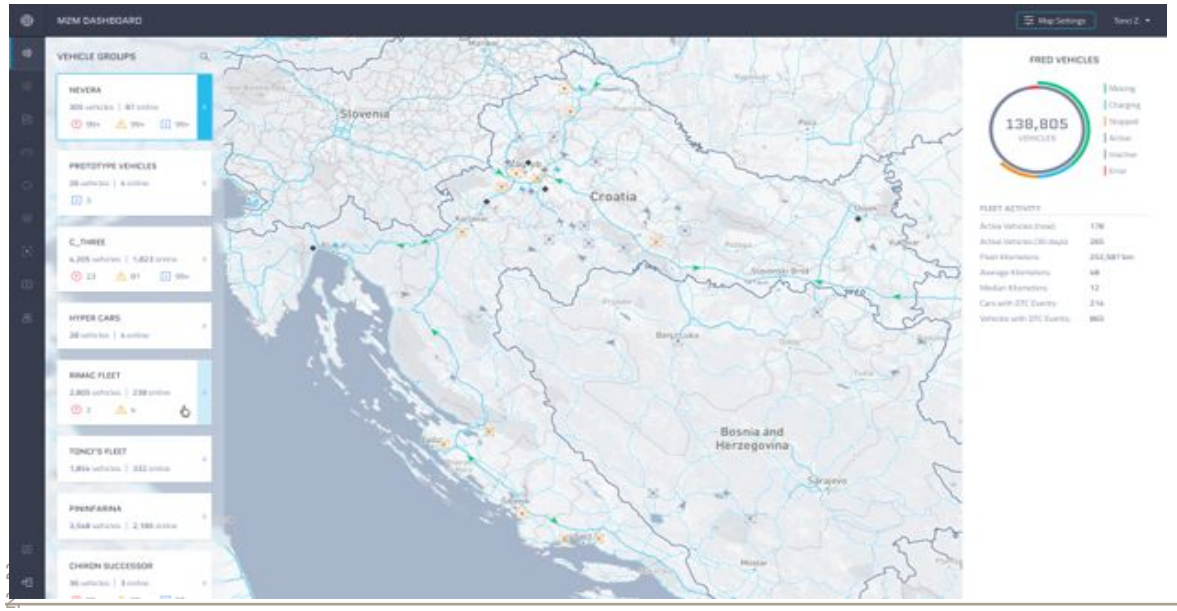
- OEM Dashboard

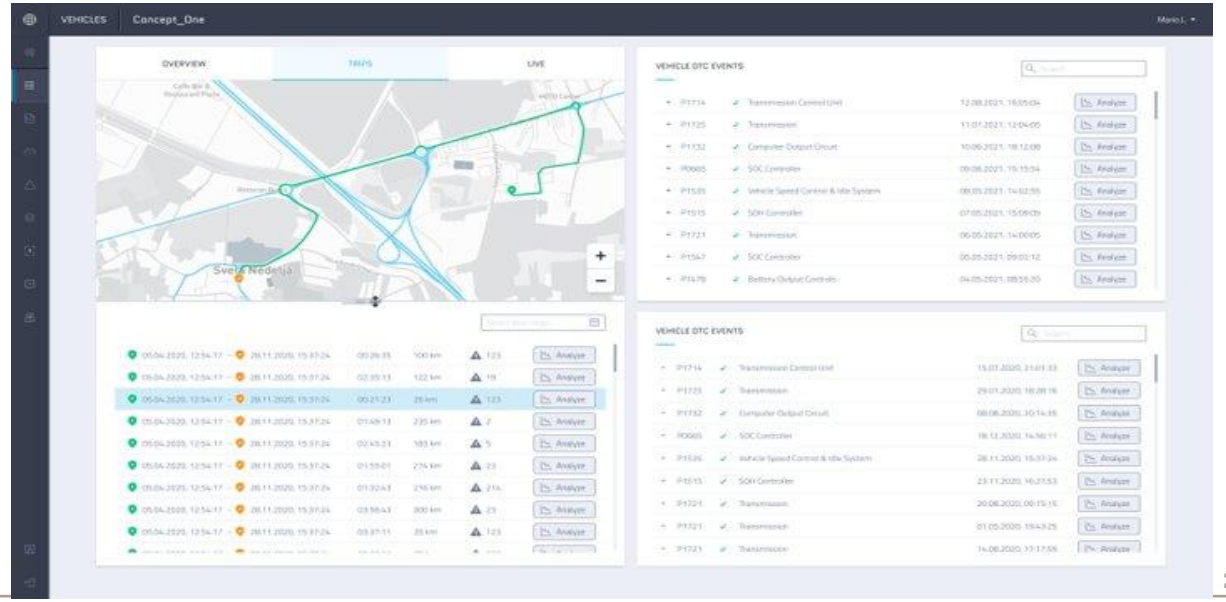
- Fleet Management
- Analyze Telemetry data
- Manage OTA Software Update,
- Live data preview

OEM Dashboard









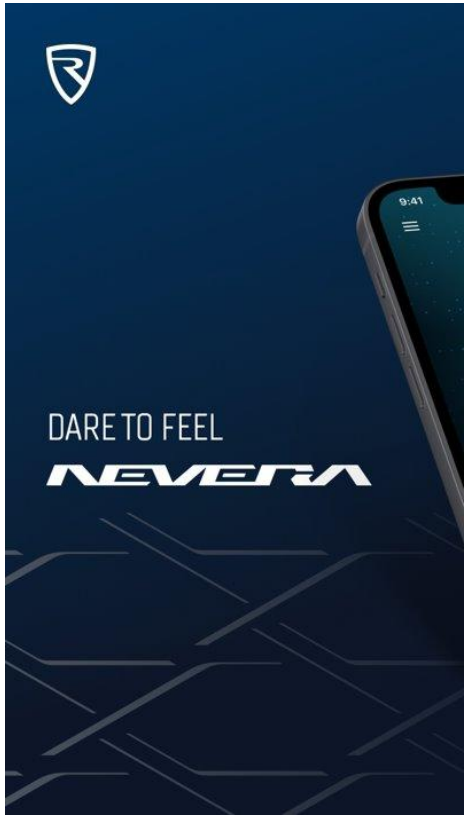
OEM Dashboard

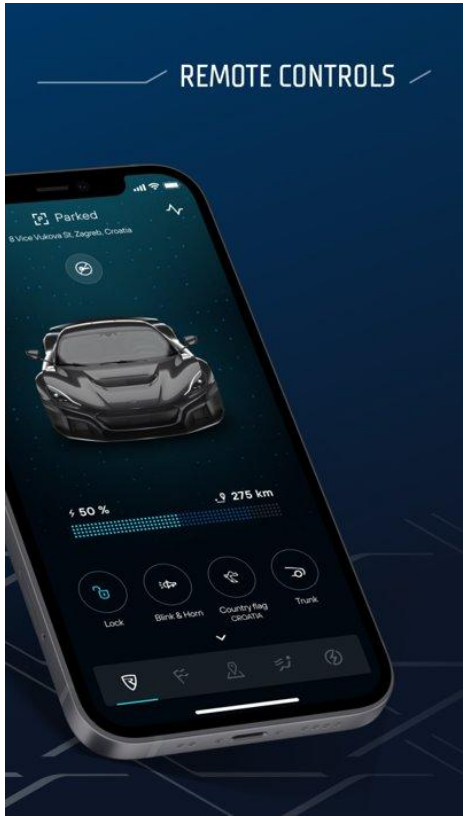
Connectivity Platform Client:

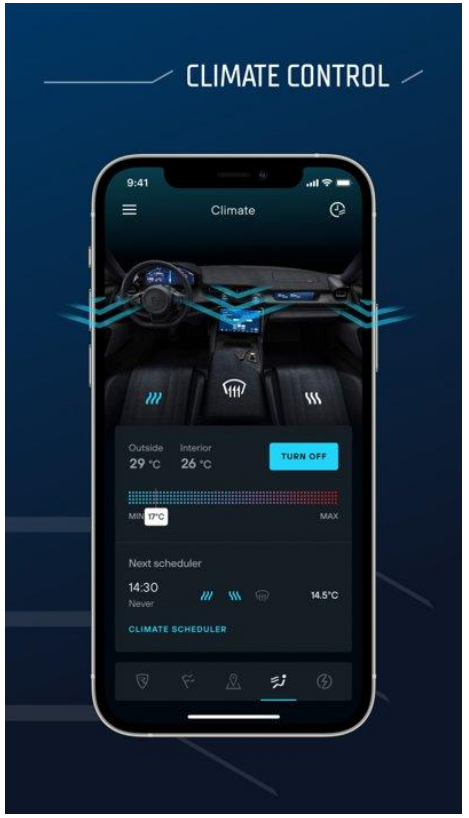
- Nevera Mobile Application

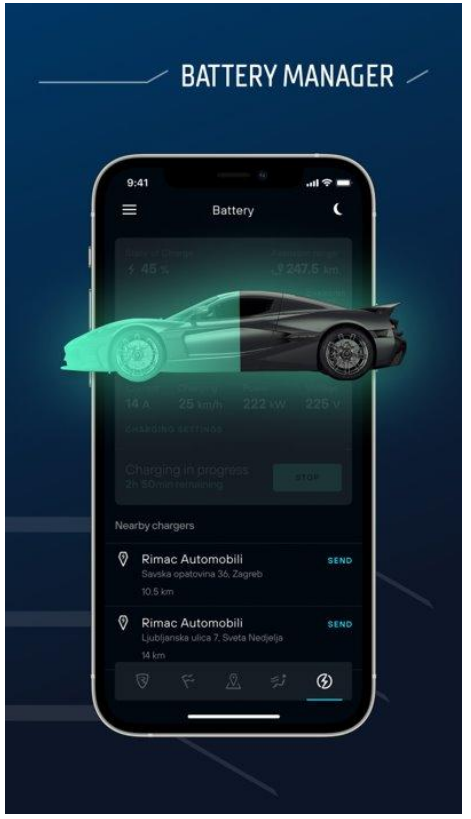
- Preview Driving Sessions
- Preview Vehicle Health
- Execute Remote Commands

Nevera Mobile App



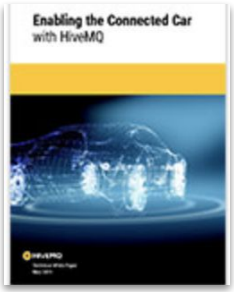






Helpful Resources

New to MQTT? Get the MQTT Essentials e-Book



Whitepaper | Enabling the Connected Car with HiveMQ

Get started with HiveMQ today: https://www.hivemq.com/downloads/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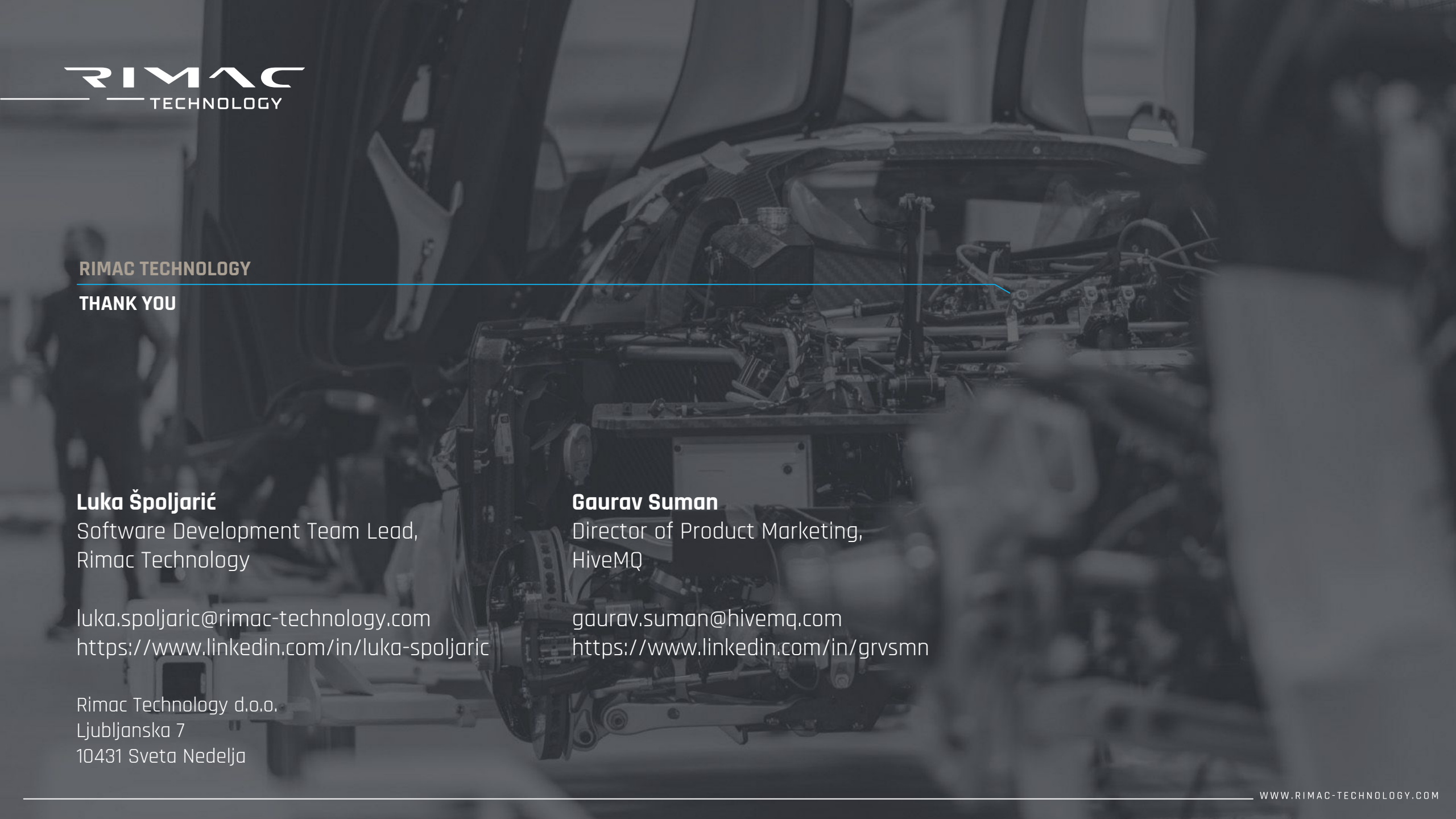

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THANK YOU

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