Fast Cars in a streaming World

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Audi Electronics Venture
“... Audi Electronics Venture ensures access to key technologies in the field of electronics by development of new technologies and realization of collaborations, joint ventures and investments.”
Agenda

Data Driven World

Audi Data Collector

ACDC Platform

Vision
Data Driven World
Amazon uses **instant personalisation** to increase revenue by **30%** annually.
Netflix analyses 600 Billion data objects a day to determine that House of Cards will be a hit, before it even airs.
Autonomous vehicles like ‘Jack’ stream roughly 4 terabytes of data a day.
Data is not only the ‘new oil’. It is the new DNA.
Data engineering is poised to deliver the next wave of “Vorsprung durch Technik” for Audi.
Audi Data Collector

CAMPAIGN MANAGER

ADMINISTRATE

MBB

MODULARER BACKEND BAUKASTEN

AUTHORIZE

ODC

ONBOARD DATA COLLECTOR

COLLECT

ACDC

AUTOMOTIVE CLOUD DATA COLLECTOR

ANALYSE

INSIGHT

APPLY
Audi Data Collector

Working Example: Realtime event

REQUEST
“Where do I find vacant parking lots in my city?"

CONFIGURATION
Vacant parking lots in his/her city

EVALUATION
Displaying vacant parking lots in my Audi connect service

DATA
Available parking lots in his/her city
Life does not happen in “batch mode”
Audi Data Collector
First Use within the brand-new Audi e-tron
ACDC Platform
Requirements of the ACDC platform

› High compute & network performance
› Scalability & Resilience
› Regional availability with data sovereignty
› Scriptable troubleshooting
Real-time Data Analysis

› Processing data streams in real-time to identify black-ice and sending this information via ACDC to all 3rd party subscribed queues
› Scoring of relevant information and instantly distributing fleet wide
Swarm Intelligence

- Generating comprehensive, always-current information about the traffic
- Examples: green waves in city traffic, changing speed limits and free parking spots
Reconciling the best route to preserve battery power due to car sensor data, location of charging stations and situational data like weather combined with predictive AI.
Data Supply Chain: SMACK Stack Technologies

- Mesos
- Akka
- Kafka
- Docker
- AWS
- Cassandra
- Spark
In order to make sure that the platform is healthy we have done several PoCs using intelligent monitoring and alerting solutions to keep track of what is important...

**the satisfaction of our customers**
Vision: Creating a entirely new customer experience

My autonomous Audi will enable the 25th hour of the day:

› Quality time: time for family
› Productive time: for work
› Down time: time for entertainment
Thank You!

Torsten Stiller
Hubert Fischer

We are hiring!