

DB mindbox

Startup Relations @ Deutsche Bahn AG

What is DB about?

12 million passengers in
trains & busses a day in Europe



260 ICE trains
132 million passengers in 2015



300 million tons goods transported
by train a year



5th biggest energy supplier and
biggest energy consumer in GER



33,300 km transport network with
40,000 train trips a day



70,000 switches
3,090 railway control centers



8,500 bikes &
2,800 cars shared



5,681 stations &
1 million m² shopping area



308.373 employees &
40.5 billion € turnover



Digitalization of Deutsche Bahn



Exploitation of **innovative technologies**



Optimization of **quality and automation**



Creation of new **growth opportunities**

Start-up culture and philosophy



Focus on **external innovations**



Rapid testing and learning



Strengthening the **culture of innovation**

DB mindbox was build to connect DB with startup ecosystem

mindbox

DB mindbox is an **open platform** for the exchange of DB with **the innovation & startup environment**

DB mindbox at
S-Bahn station
Jannowitzbrücke

- located in the center of **Berlin**
- **700 square meters** of space
- over 30 desks for **co-working**

- **three programs** to facilitate exchange
- **event space** for pitches, workshops & meetings
- **networking** within the **startup ecosystem**

Innovating Deutsche Bahn with your input...

**DB
Accelerator >**

Pitch your idea

**DB
Challenges >**

Your solution for
our tasks

**DB
Open Data >**

We opened our
data and now it is
up to you

DB Accelerator

PITCH YOUR IDEA

HARDWARE.co helps to find hardware centered startups for the DB Accelerator **mindbox**

betahaus | mindbox

HARDWARE.co

2017
BATCH 5

35 COUNTRIES FROM ALL OVER THE WORLD



AFRICA



AMERICA



ASIA



EUROPE



OCEANIA

588

STARTUPS
APPROACHED

87

APPLICANTS

26

INTERVIEWS

8

ACCEPTED
STARTUPS

10-DAY ACCELERATOR PROGRAMM

HARDWARE.co

Started in 2013 as a collaboration between betahaus and the hardware berlin group. Its founders include investors, serial entrepreneurs and acceleration experts.

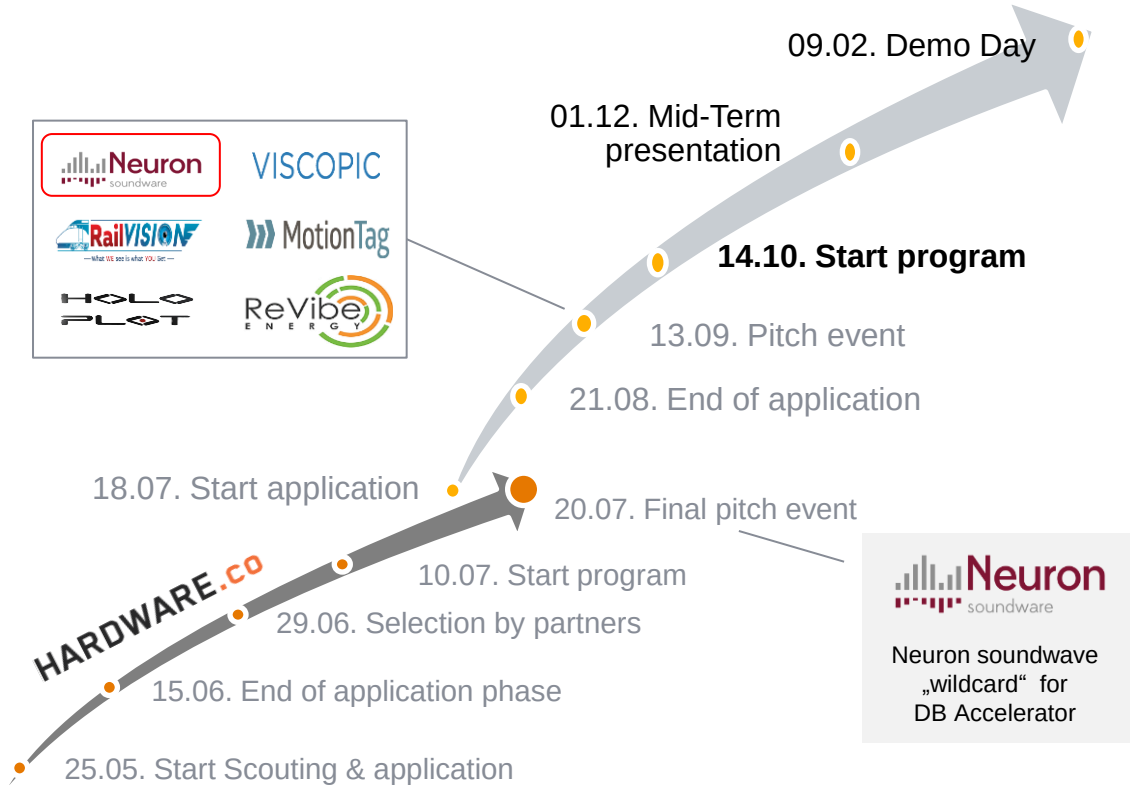
betahaus, one of its founders, brings 8 years of working with startups plus 5 years in accelerator business and matchmaking programs. In 2016 DB mindbox joined the collaboration. Since then betahaus and DB mindbox are organizing the batches of HARDWARE.co as partners.

With platinum partners such as Audi, Bosch Beyond and Siemens and Deutsche Bahn joins forces to create a multi-stakeholder network.

Summer batch of hardware.co with wildcard to Neuron for DB Accelerator

MINDBOX

BATCH 4 PARTNER	    a company of Robert Bosch Car Multimedia
OUTCOMES	15 selected startups, 11 attending incl. mobility, IoT, predictive maintenance startups, resulted in being invited to partner accelerators and partnerships.



Your benefit

We help you to take your startup to the next level and offer **unique opportunities** to **fast-track** your **ideas**, products and solutions.



Funding

- ✓ **3 months** program
- ✓ **25k € zero equity taken**
- ✓ **co-working** space



Know-How

- ✓ access to **world of railway**
- ✓ access to **unique data** sets
- ✓ access to **DB network**



Mentoring

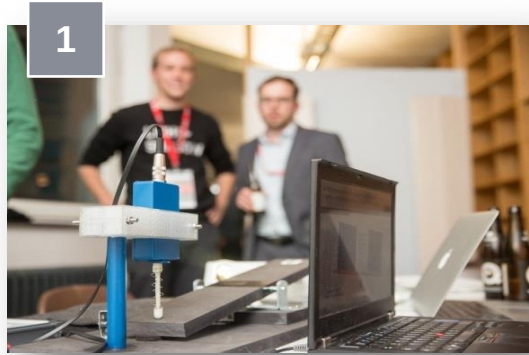
- ✓ dedicated **startup manager**
- ✓ internal & external **coaches**
- ✓ cooperation with **betahaus**

3-4 batches a year

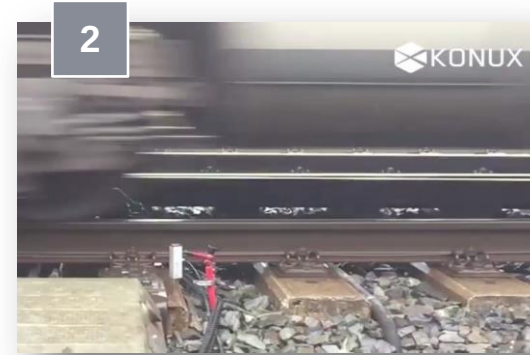
Three batches of positive experience with startup co-operation



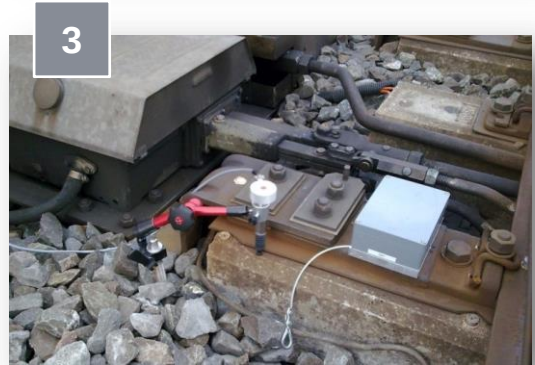
KONUX developed an innovative sensor for switches



Mockup after DB Accelerator, Okt. 2015



Prototyp I Feb. 2016 after follow-up project



Prototyp II April 2016



Small batch series for field test July 2016

Lighted concrete (SIUT) was installed end of 2016 in Anhalter Bahnhof Berlin

mindbox



Further applications:

- passenger handling,
- speeding up passenger transition,
- safety instructions
- ...



Berlin main station 2016 (Foto: Green City Solutions)

The „CityTree“

- binds fine particular dust from around 417 passenger cars,
- reduces local air pollution by 30% within a radius of 50 meters
- is cooling the air and reducing noise,
- generates a better indoor climate.

Easy locker wants to digitalize DB lockers



That could be
the future of
over 22,000
lockers...

..with 5 Mio.
utilizations a
year



We selected six startups for Batch on the future of maintenance

mindbox

**We are looking for the future of maintenance!
Ready for change ...**



www.blunder.es



www.eco-adapt.com



www.indtact.com



www.kinemic.com



www.lexatexer.com



www.machineswithvision.com

For the first program batch, we're focusing on Smart City tech, such as:

- Blockchain
- Mobility algorithms
- Integrated mobility products
- Deep Learning in a mobility context
- Changing usage of stations and mobility hubs
- Identification and security for moving goods and people



On April 5, we selected six startups for the Beyond1435 program

mindbox



myki

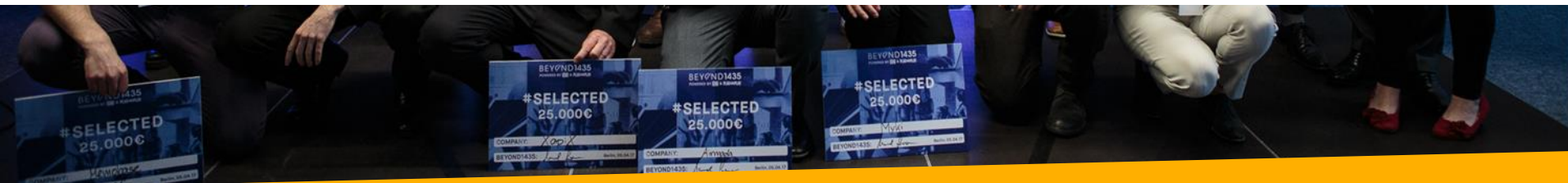


MemoBase Voice

NAVENTIK



FIVE
AI



DB Challenge

YOUR SOLUTION FOR
OUR TASKS

Challenge

DB BUs face diverse challenges, they need

- a broad range of **new external ideas & approaches**, an understanding of pros & cons
- an estimation on **quality, costs & benefits**
- partners for **co-creation, co-development & co-production**



DB Challenge

DB internal search for solutions

- Limited number of **internal experts**
- Use of **well-proven technology**, processes, standards
- **Low number** of included **approaches**

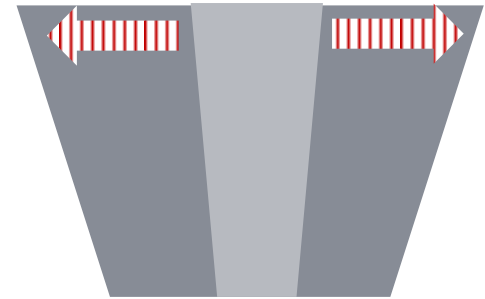
Solution space



DB Challenge

- **High number of different external experts**
- Getting to know **new methods**, technologies and
- Possibility to choose from a **higher number of relevant approaches**

Solution space



Higher chance to get good results!

Until today we have run three different challenges – next challenge to come **mindbox**

DB Challenge

Past DB Challenges

DB Information:
new design,
new processes



DB Information UX:
digital monitors,
selfservice terminals,
interaction design



DB Digital Header:
automated readout of
technical plan
headers



Verwaltung: DB Dienstleistungen KT Regionalbereich S		Eigentümer: DB Infrastruktur Netz Regionalbereich SW	DB NETZE	Kabelspießplan Tk F 7249, 48 BF Friedrichshf. ESTW-UZ - BF Singen ESTW-UZ A-DF(ZN)ZY(SR)ZY 4x12 E9/125 für FIST-GCOG2 - DD Verbindungsmulle VM 18/19, Seite A	LWL
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Possible DB Challenges (in discussion)

- Drohnes for DB construction supervision
- Digitalization of special format plans
- Measuring the length of platforms
- ...

Already three times DB got excellent input for their tasks

1st Challenge on DB Information



11/15 -> 01/16: future DB Information model
Concepts & design ideas will be part of mockup

2nd Challenge on UX @ DB Information



02/15 -> 04/16: UX for some screens @ DB information,
will also be part of mockup

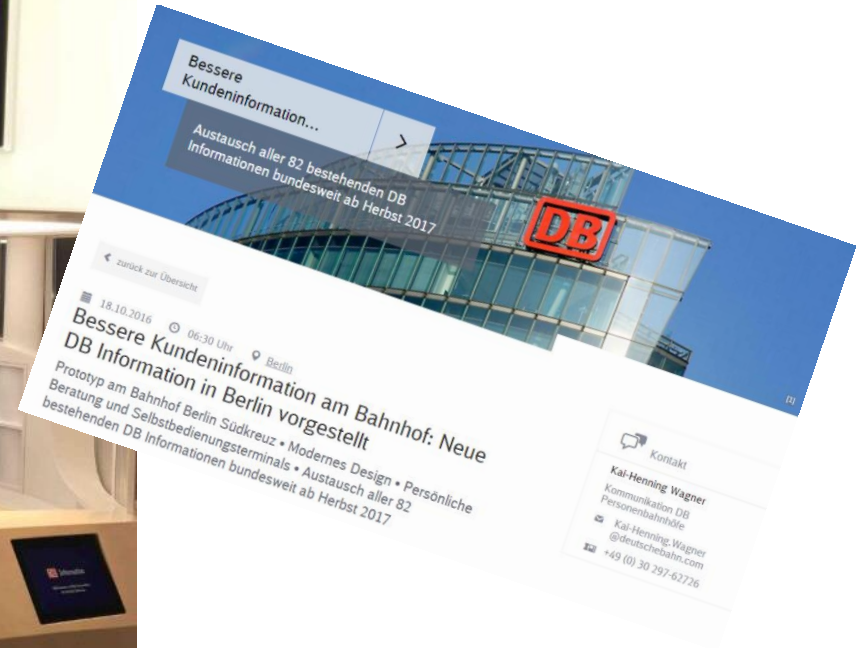
3rd Challenge on automated doc management



02/15 -> 04/16: automated identification & processing
of plans, fusion of concepts

New DB Information with ideas from DB Challenges will be rolled out in 2017

mindbox



DB Digital Header:Challenge

Automated reading out of technical plan headers and import of data to SAP system

Verwaltung: DB Dienstleistungen
KT
Regionalbereich S

Eigentümer: DB Infrastruktur
Netz
Regionalbereich SW

DB NETZE

6457011260

Kabelspleißplan Tk
F 7249, 48' LWL
Bf Friedrichshf. ESTW-UZ - Bf Singen ESTW-UZ
A-DF(ZN)2Y(SR)2Y 4x12 E9/125
für FIST-GCOG2 - DD
Verbindungsmaße VM 18/19, Seite A

Tkks

Bestand		Gez.	Datum	Name
Format:	297x0210	Gepr.	25.04.2013	Brunk
Maßstab:	ohne		26.04.2013	Tschirner

Ursprung

Projektbeschreibung:

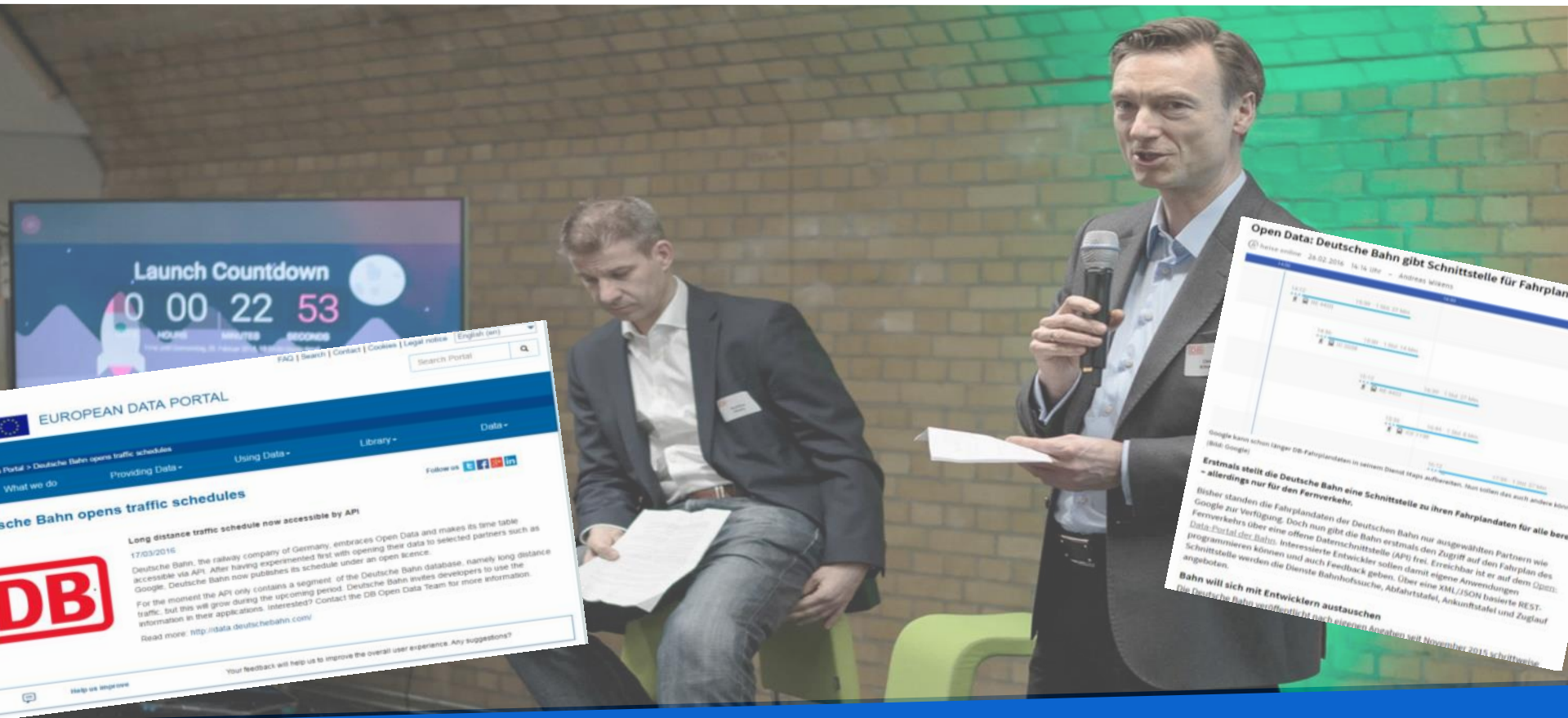
Ers. F.: Blatt 1
1 Bl.

- **3 months** challenge with **10 expert teams**
- **Continuous evaluation** and transparency on the **leaderboard**
- Team of **DFKI** wins
- Software design for DB by **DFKI & DB Systel** with an **agile approach** until **end of 2016**

DB Open Data

WE OPENED OUR DATA AND
NOW IT IS UP TO YOU

DB mindbox supports open data policy within DB



Data as basis for internal & external innovation for DB

Building up the ecosystem for data together with DB Systel and DB units

Sources



- **DB** collects and stores **a lot of data**
- Parts of the **data** is **still not used**
- Growing amount of **data accessible**

Usage



- Storage of data from different BUs at a common **platform**
- Separate **platforms** for **internal and external** developers
- Increasing usage of **big data analysis**

Benefits



- Unlock **valuable data** as basis for **innovation**
- Better **analysis** and **prognostics**
- Data as basis for **new business models**

DB data platforms: DB databox and DB Open-Data-Portal

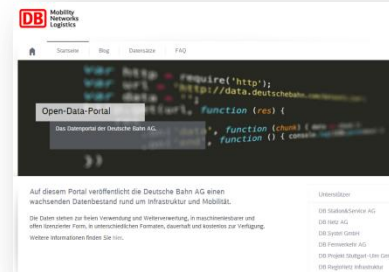
DB databox



- **databox is DB internal platform**
 - **45 data sets** published
 - DB internal analysis available
 - **Blog** and **mail-in** for exchange
 - API-portal in preparation

<https://databox.noncd.bku-web.db.de/dataset>

DB Open-Data-Portal

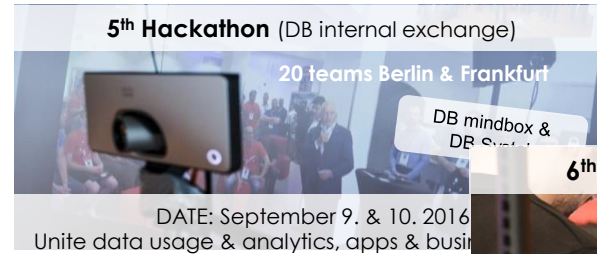
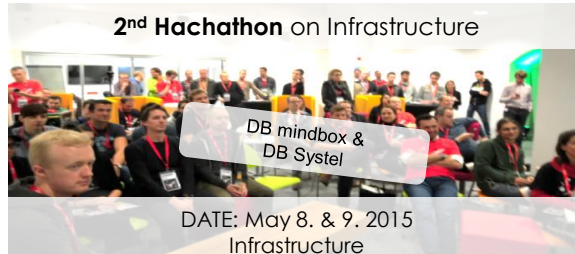


- **DB Open-Data-Portal is the central data hub for data under free license**
 - **16 data sets** published
 - **three APIs** available (timetable-, park houses-, elevator-API)
 - **blog & feedback** functionalities

<http://data.deutschebahn.com>

Five successful hackathons already took place – more to come

DB Open Data - Hackathons



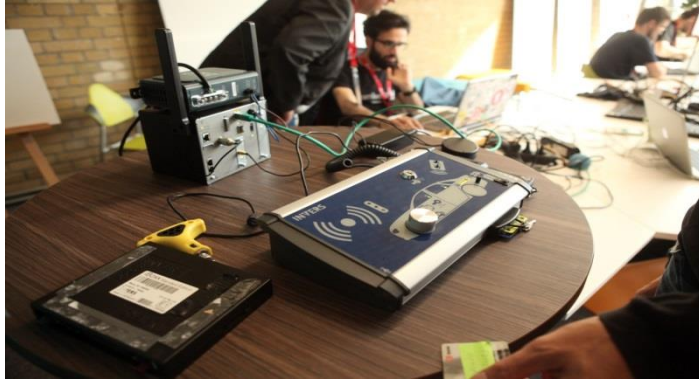
7th Hackathon:
12. -13. Mai 2017

together with:



Fourth DB Hackathon with hardware hacks

DB Hackathon June 2016 in cooperation with DB Systel



Hack of station-clocks
and retro-fit of locker
boxes with electronic
locks

First show cases with API of the timetable

Tools for developers have been developed first

Show cases

- GTFS-Feed: <https://github.com/patrickbr/db-api-to-gtfs>
- JavaScript-Client: <https://github.com/pbock/fahrplan>
- Oracle DB Script: <https://github.com/Dani3lSun/apex-plsql-api-bahn-fahrplan>
- React.js app (als API-Frontend): <https://github.com/brakmic/OpenLok>
- Scripte: <http://ottlgr.de/checking-out-open-data-from-deutsche-bahn>
- Integration into CloudRail: <http://cloudrail.com/>
- Naturtrip/Route360: <http://bit.ly/1XzkgVI>



Results of the DB Hackathons – focus Open Street Map

Examples

BahnRoulette



■ <http://blattspinat.com/index.php/posts/bahnroulette>

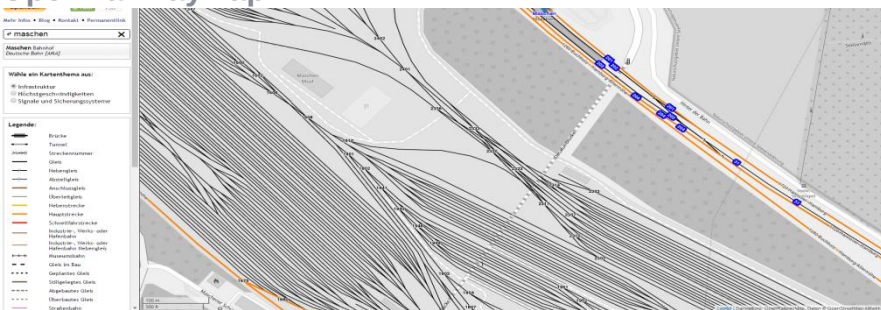
Bahnhof.de with OSM-map & elevator status



OpenStationMap



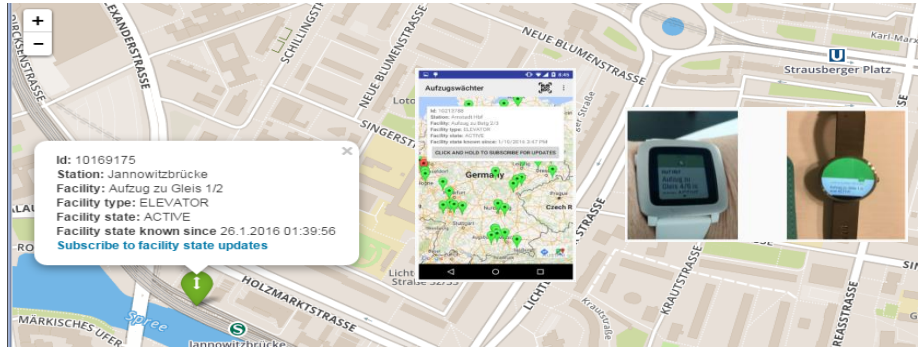
OpenRailwayMap



Results of DB Hackathons – Focus escalators/ elevators

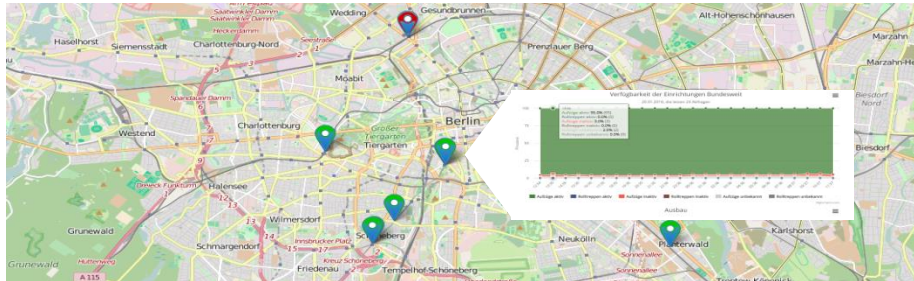
Example

Aufzugswächter



- System gives **status information** of elevators
- Website, API + Messenger Service, Twitter-Bot, Smartphone-APP, QR-Code-System

Source: <http://aufzugswaechter.org/> /
<http://api.aufzugswaechter.org>



- Webseite that shows and evaluates information, long term statistics and information about possible limitations

Source: <http://db.janis-streib.de>

Events of DB mindbox – get connected



Sundowner @ DB mindbox – first step into the startup world

mindbox



DB shows results of cooperation with startups at Cebit 2017

mindbox



Summary: Overview of the key success factors of DB mindbox

Success factors: good programs, close relation to business units & startup culture

Programs that deliver



DB Accelerator:
4 batches: >20 startups
working cooperations



DB OpenData:
16 datasets online,
6 hackathons, first Apps



DB Challenges:
3 runs, prototypes to be
tested this year

Close relation to BUs



BU are sponsors,
close connection
obligatory



Startups give **ideas**
to digitalize DB & for
new business ideas



BUs commit time
for **mentoring &**
guidance

Startup culture & know-how



Diverse team of experts
from DB, startup ecosystem
and tech & ICT business



Individual support by
DB team & specialized
external mentors



Hands on culture, step by
step installation with high
external recognition

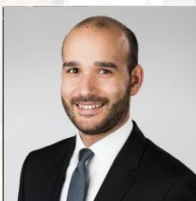
Startup manager @ DB mindbox help to get connected



Fanny Schröter



Frank Wolter



Friedrich Hedtrich



Hanno Harland



Julia Franke



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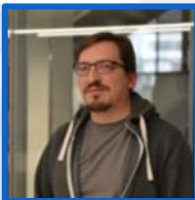
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Svetlana Drümmer



Stefanie Ackermann

DB mindbox is part of the DB digital program ...

mindbox



digital

