Digital Twins @ DB

OpenRheinMain IT Conference

DB Systel | Darmstadt | 30th September

DB Systel
Digital bewegen.
Gemeinsam.

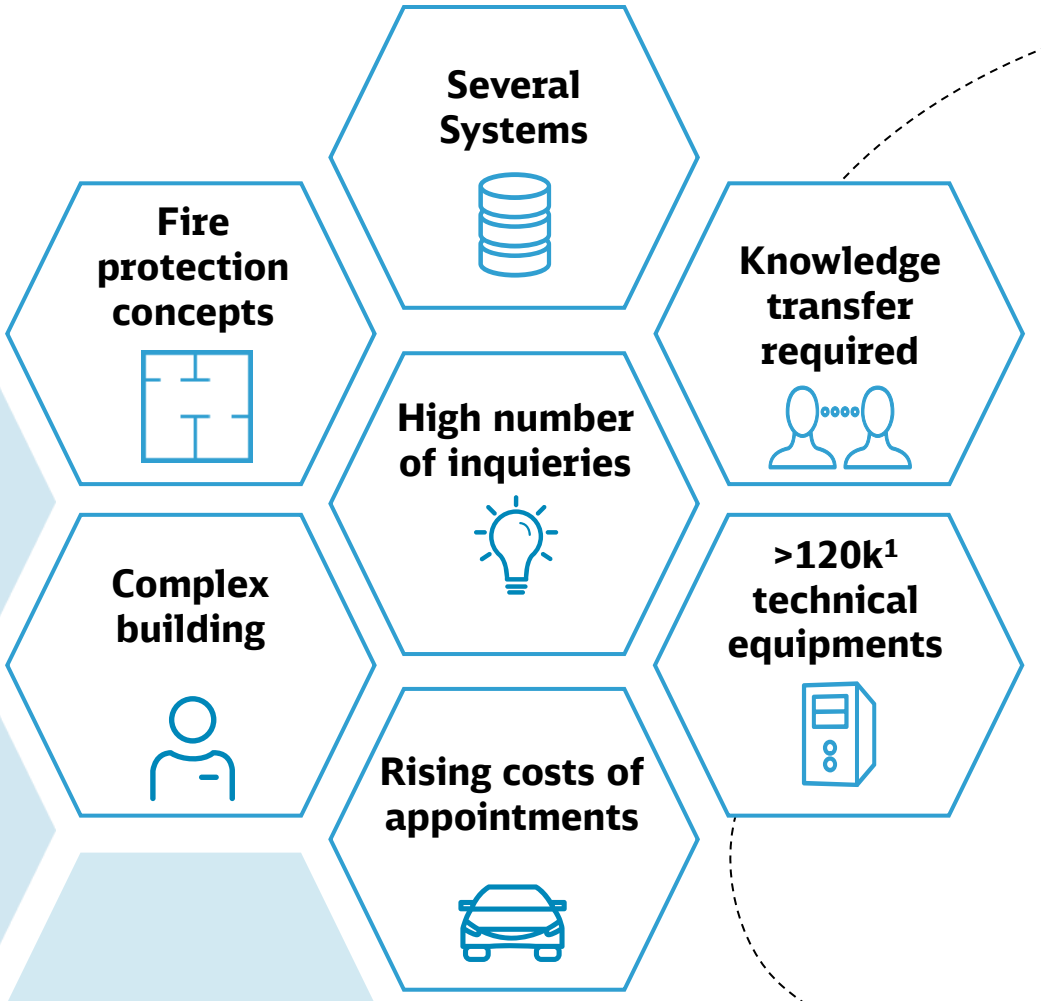
Darmstadt Main Station

How many DB ticket machines are at Darmstadt main station?

How many fire extinguisher and fire bulkheads?

And where are they?

There are several hurdles, which make facility management of more than 5.300 train stations and 14.000 buildings inefficient



There is a high potential to make things easier for our colleagues!

(1) Technical equipments of 14.000 buildings

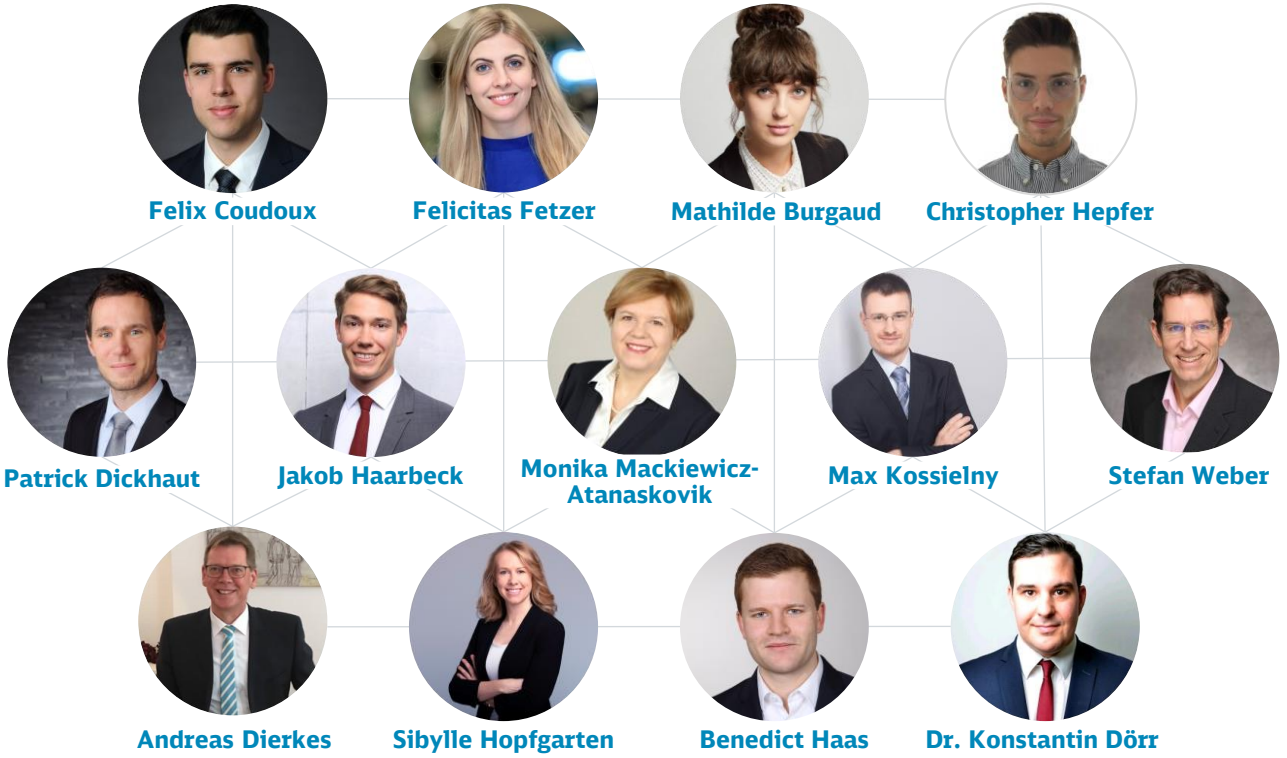
Introduction – who are we?

As a **multidisciplinary in-house consulting team** with many years of expertise in the development of IT strategies and functional know-how, we help **our partners with digital transformation** and the **development of innovative business models**!

Our **focus** is on our **partners and their wishes**!

We connect **business and IT**.

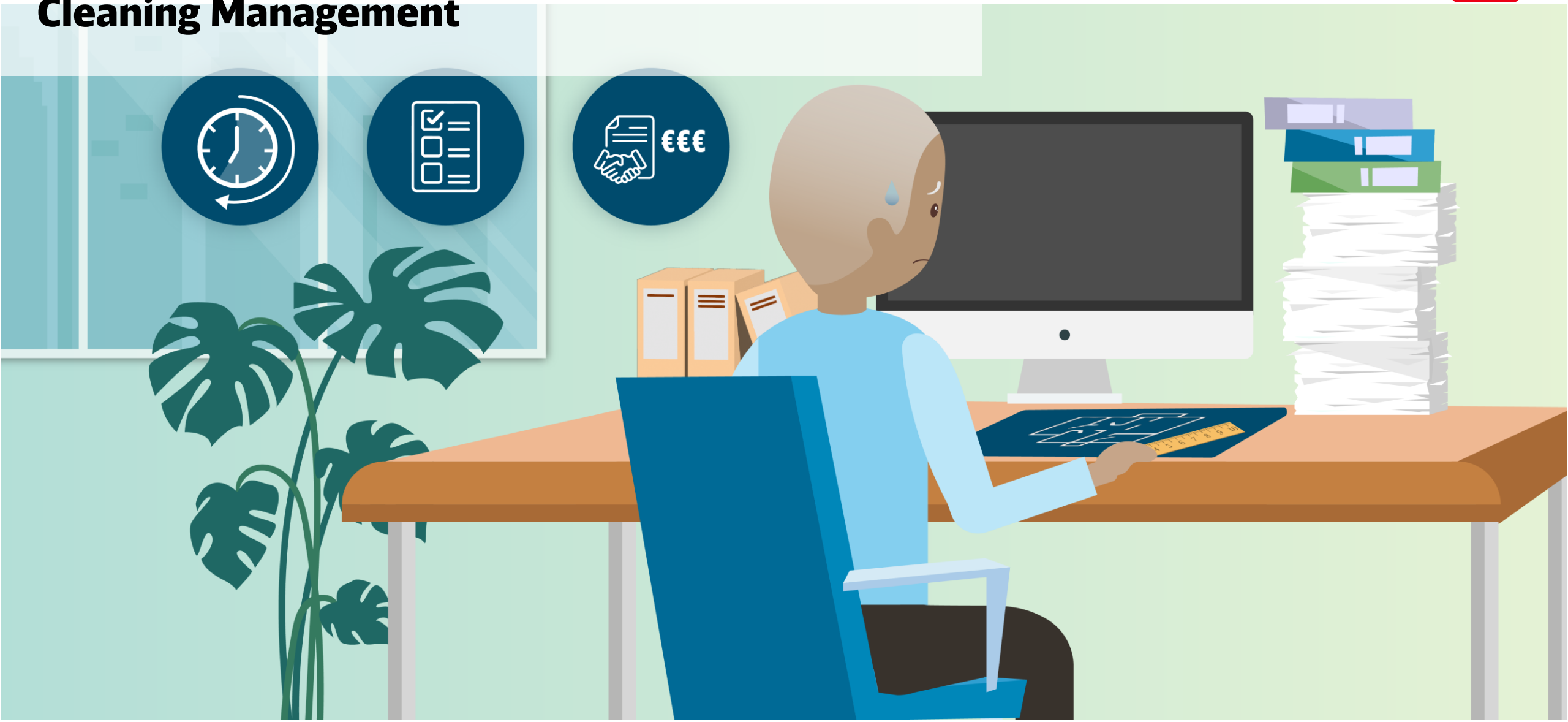
Your **digital transformation** is in good hands with us.



How did we approach the problem?

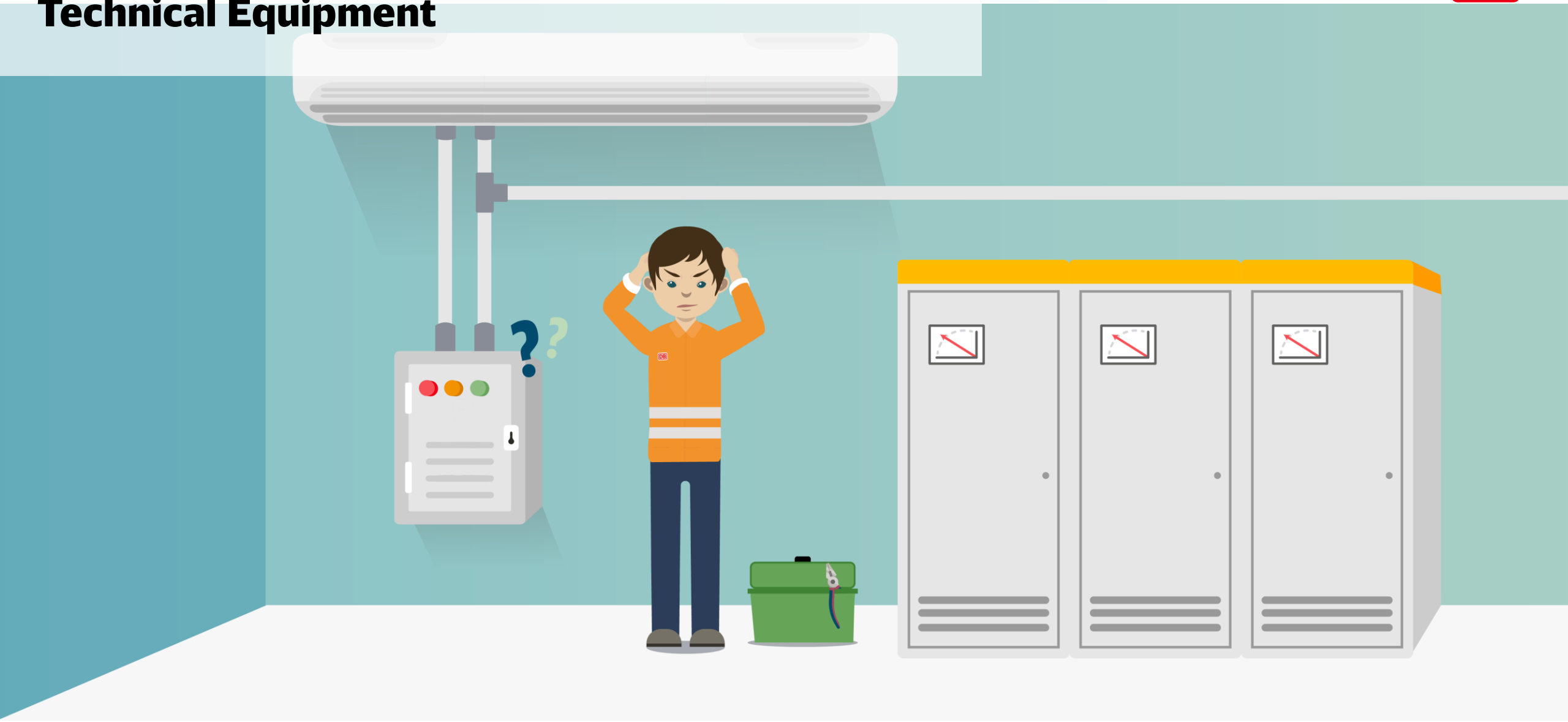
Phase I: Proof of Concept	Phase II: Concept	Phase III: Piloting
Identification **pain points** and **potentials**	Identification of additional **use cases**	Two **pilot** buildings
Identification of **use cases**	**Cost** and **value estimation**	**Validation** of cost and value estimation
Markt screening and **technology** selection	Evaluation of **system integration**	
PoC		

Cleaning Management

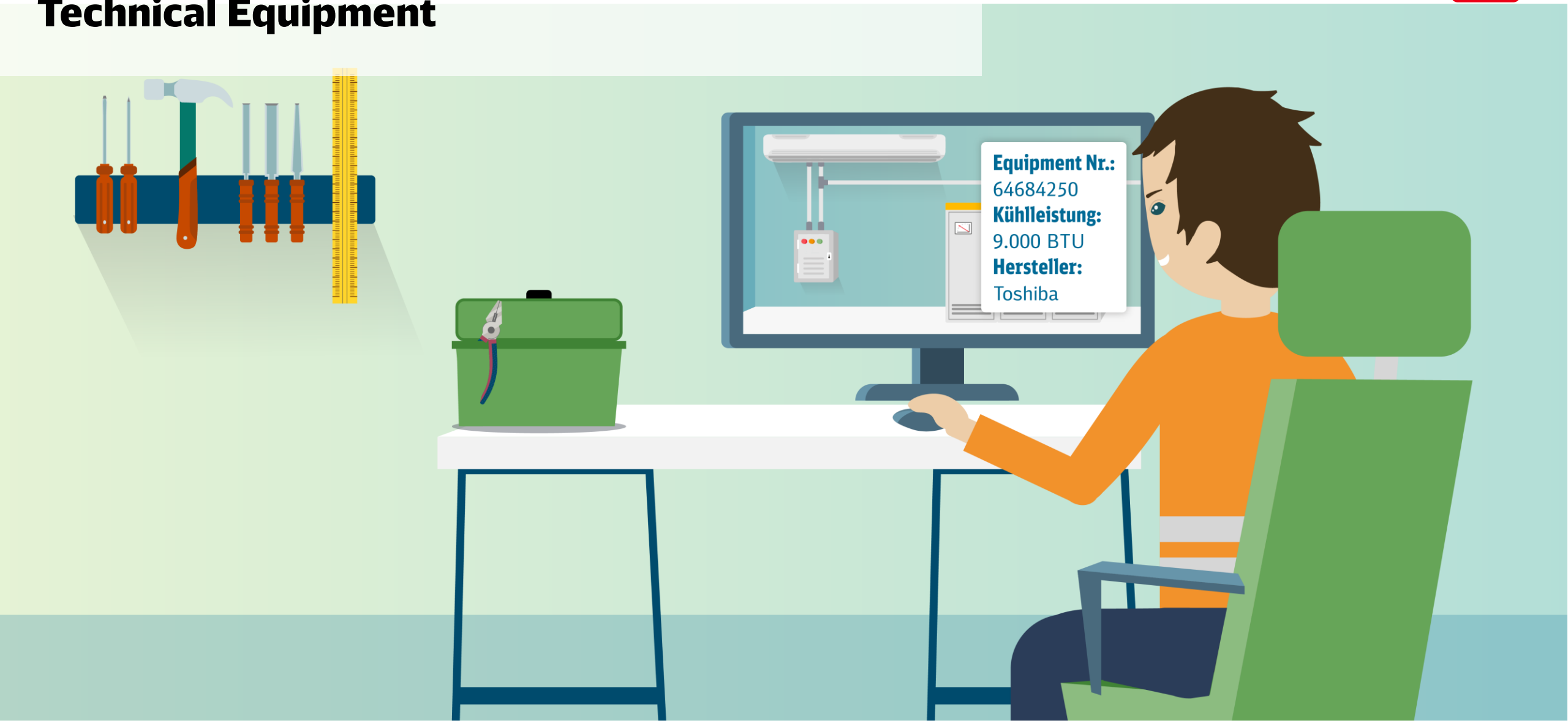


Cleaning Management

Technical Equipment

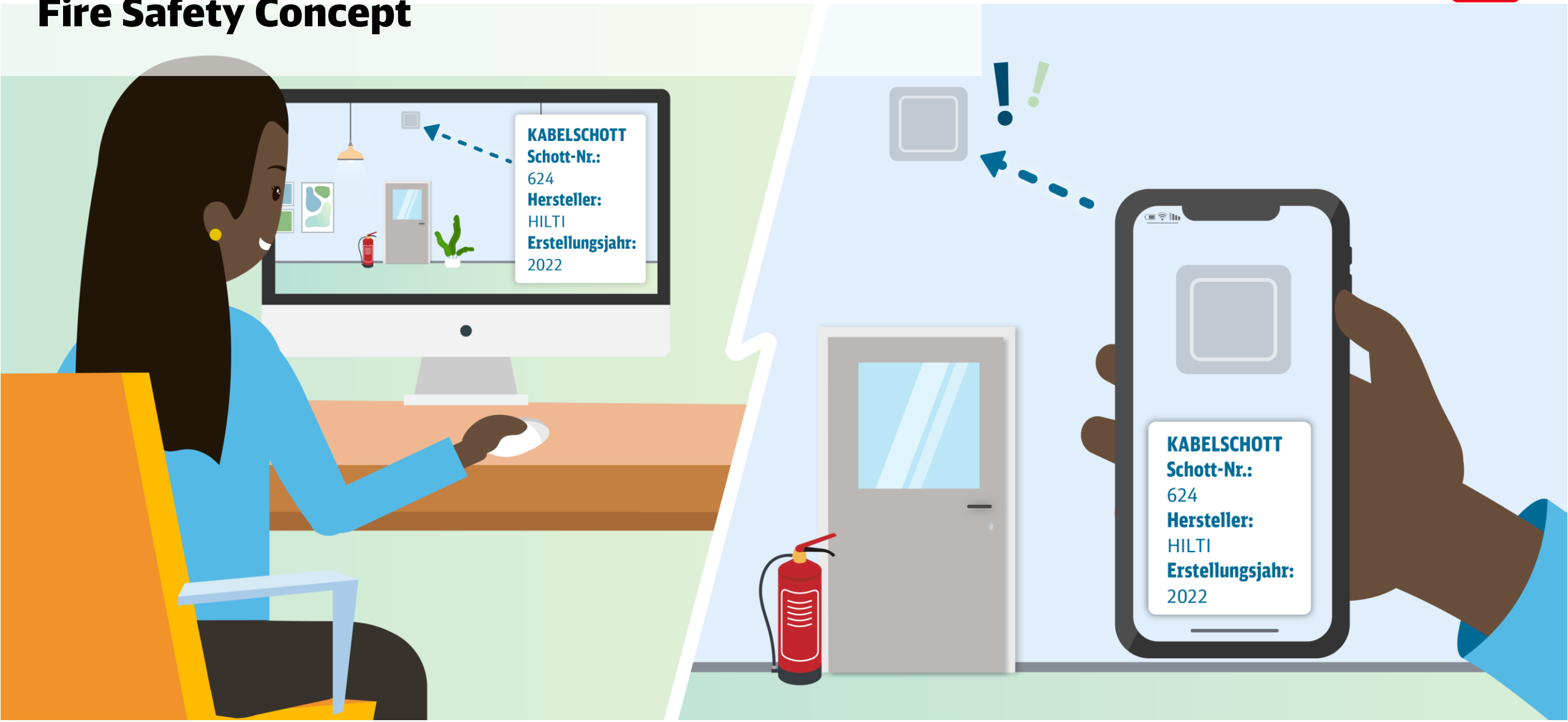


Technical Equipment

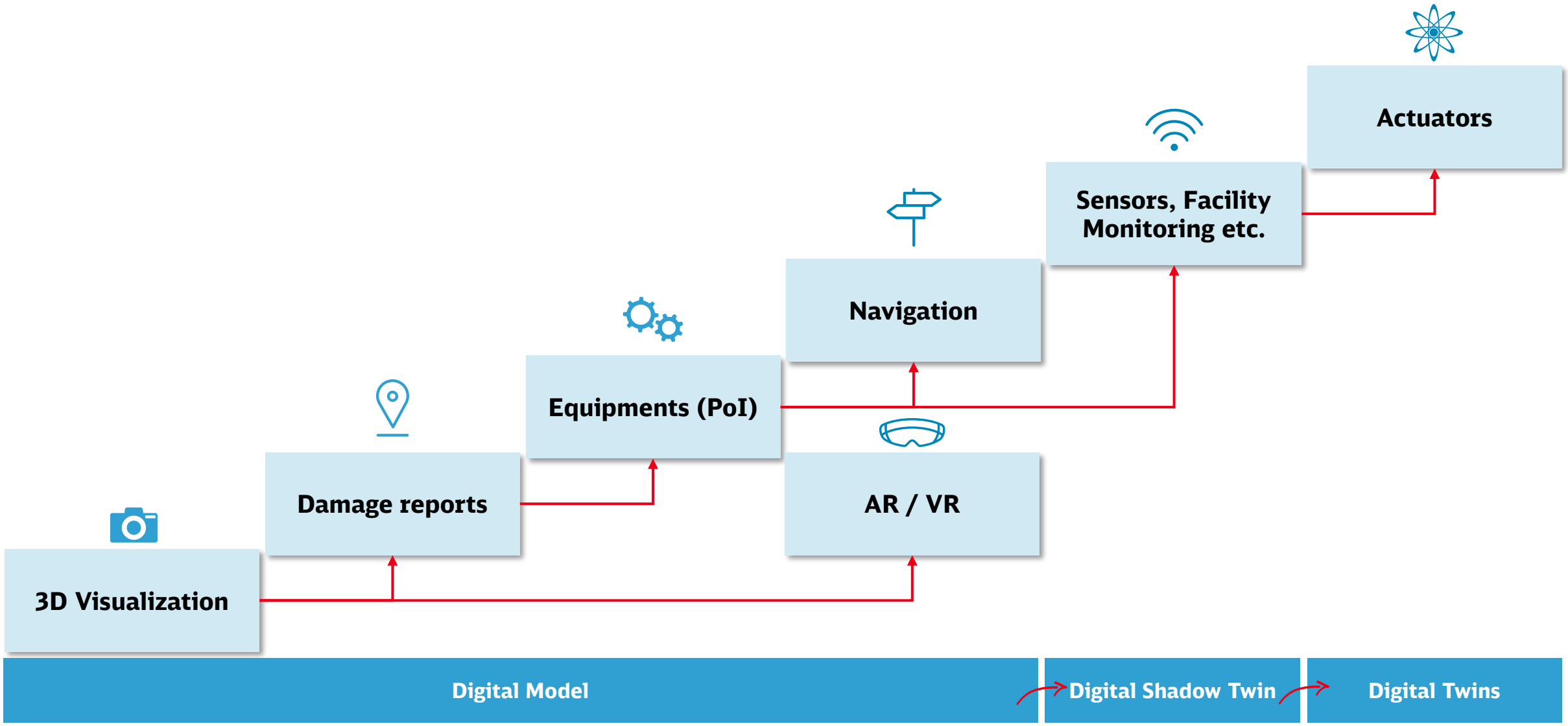


Fire Safety Concept

Fire Safety Concept



There are several steps towards Digital Twins, which add value to our customers and colleagues



There are several examples available, where digital twins can be used

Indoor orientation via AR

- **Orientation** inside train stations is partly **challenging**
- Great **uncertainty** in case of **ambiguous routing and signage**
- Information on **barrier-free** travel is not always available

DB Navigator Beta only available for android

Visualization ESTW incl. PoI

- **Orientation** inside complex buildings is time consuming
- **On-demand information** on **technical equipment** necessary
- **3D visualization** for back-office employees **crucial**

There are several categories, where value can be generated

Productivity

33% estimated time reduction compared to current processes

Transparency

22% increase in transparency

Reliability

10% increase in reliability of technical equipments

Customer Satisfaction

22% increase in customer relationship

Know-How Transfer

Faster onboarding of new employees and training

Employee Satisfaction

Increase in employee satisfaction

Data Quality

Higher data quality, due to quality gates

Automation

High potential to automate process steps

Security

Higher security for customers and employees

Compliance

Higher compliance to regulations

Source: Lexta part of Accenture (2022) – „Marktstudie Digital Twin“, commissioned by Deutsche Bahn AG

We are on our way to a world twin

Data Islands

The data of the object is distributed in different systems and difficult to integrate

Digital Shadow Twin

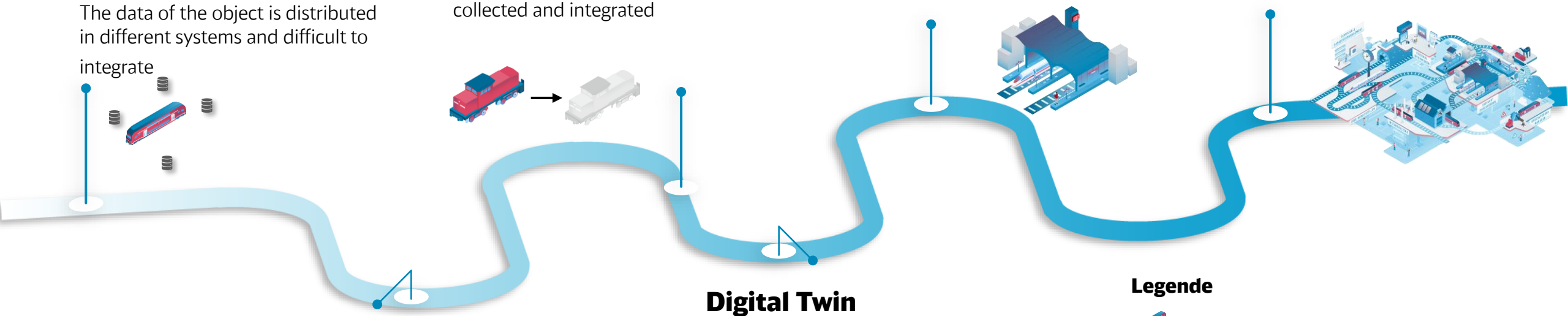
Data from a wide variety of sources is constantly but unidirectionally collected and integrated

Twin of Twins

Digital Twins, which belong together professionally, appear as a single Twin (of Twins)

World Twin

Twins from different professional contexts can interact autonomously



Digital Model

The data is unique or is recorded selectively in an object model

Digital Twin

The integrated data flows constantly and bidirectionally between twin and object

Legende

- Real Object
- Virtual Object
- Selective Collection of Information
- Constant collection of information
- Unidirectional communication
- Bidirectional communication
- Complexity level low - high

Quelle: DB Systel GmbH | WSN Digital Twin | Chief Technology Office | April 2022
DB Systel GmbH | Digital Business Enablement Consulting | Darmstadt | 30th September

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