



**Bosch IoT** Suite

One open IoT platform for all business domains

# Bosch.IO Industries & technology



Agriculture



Energy



Mobility



Building



Manufacturing



Consumer Goods



Retail



## Use cases



Plant disease prediction

CO<sub>2</sub> reduction

Digital farming

CX optimization

Cold chain management



In-store tracking

Customer experience



Irrigation optimization

Grid optimization

Data analytics



Digital twins

Asset management



Charging infrastructure

SOTA/FOTA



Lift management

Usage-based services  
Smart meter  
Space management

Plant disease  
prediction



CO<sub>2</sub> reduction

Digital farming

Smart cities

CX optimization

Cold chain  
management



In-store tracking

Customer experience



Usage-based services



Space  
management

Lift management



Data analytics



Digital twins

Predictive maintenance

Asset management

Customized IoT projects based on ...

domain-specific IoT solutions and ...

the Bosch IoT Suite.

## Bosch IoT Suite – open IoT platform for all business domains

Proven platform for all  
IoT challenges

Data management

Device management

Software updates

Device connectivity

Proven customer benefits

**Deployment flexibility**

– ensured by multi-cloud strategy

**Lowest vendor lock-in**

– due to open source approach

**Quick project success**

– by high no. of supported protocols

**Simplified system integration**

– due to complete IoT solution stack

**Investment security**

– strategic IoT backbone for Bosch Group,  
developed to support all IoT use cases



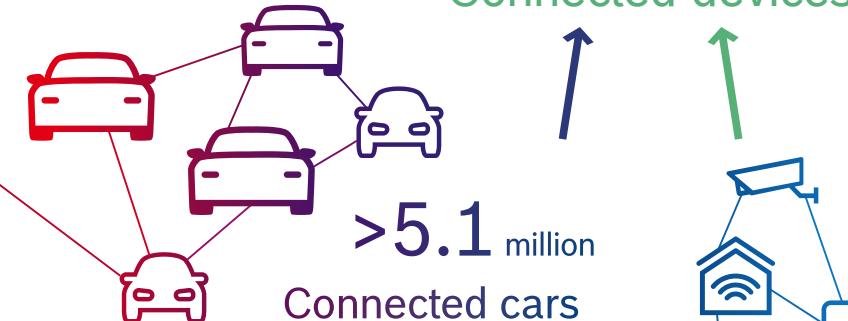
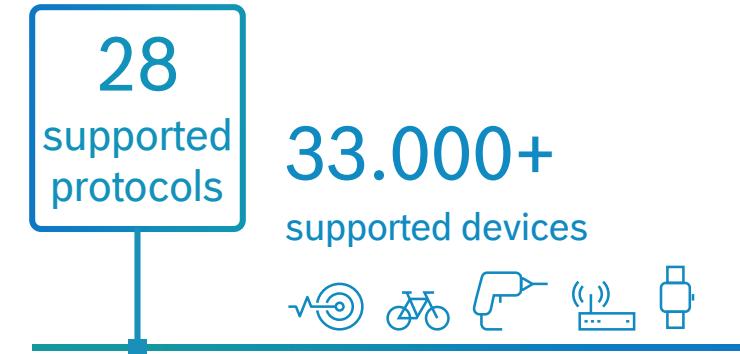
**Bosch IoT** Suite

# The Bosch IoT Suite

## Facts and figures



9.000 systems  
in Connected  
Agriculture applications

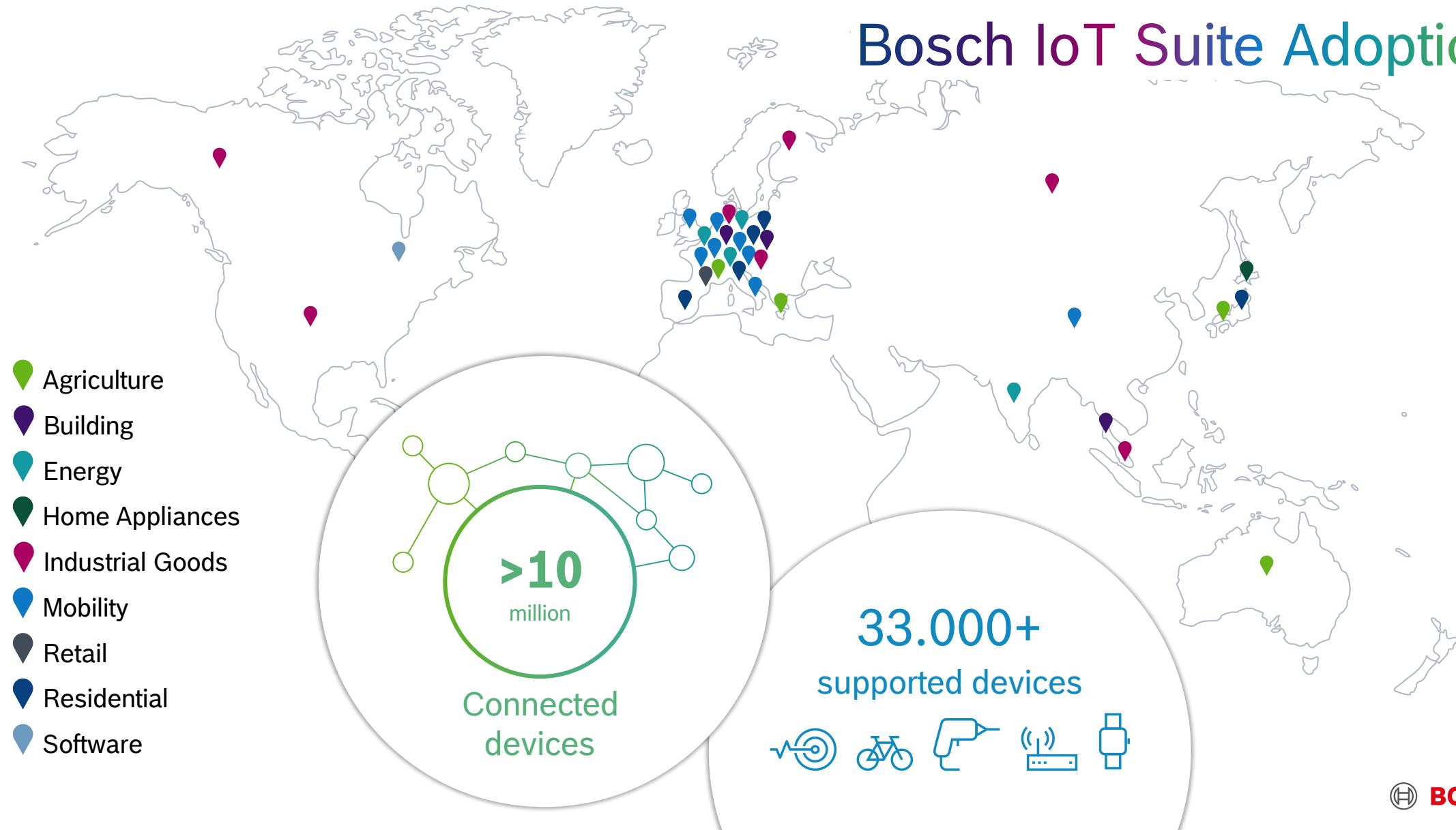


Enabling >5.2 millions of homes  
to be connected.  
**158** supported device types  
in the largest customer project



Managing data of >3.1 million  
connected vehicles

# Bosch IoT Suite Adoption



# Product overview

IoT  
IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT  
IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT  
IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT  
IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT IoT



# The Bosch IoT Suite

## Challenges in the IoT



### Device connectivity

How to efficiently connect millions of devices using different protocols and legacy devices?



### Software updates

How to efficiently update millions of devices and rollout of security updates?



### Device management

How to remotely configure devices and gateways in order to reduce manual efforts?



### Data management

How can I utilize field data to optimize products and solutions?

# The Bosch IoT Suite

## Challenges in the IoT – solved by the Bosch IoT Suite

[www.bosch-iot-suite.com](http://www.bosch-iot-suite.com) 



Device  
connectivity



Bosch IoT Suite for  
Asset Communication



Software  
updates



Bosch IoT Suite for Device Management



Device  
management



Data  
management



# The Bosch IoT Suite

## Solutions for device connectivity



### Device connectivity

How to efficiently connect millions of devices using different protocols and legacy devices?



**Bosch IoT Suite**

### Bosch IoT Suite for Asset Communication



“Our application is managing various devices – be it Modbus, KNX or EEBus devices. Thanks to the device abstraction layer, all of them can be managed in the same way.”

*Mathieu Creteau,  
Lead Software Architect,  
Hager Group*



**Bosch IoT**  
Gateway Software

- ✓ Pre-configured package reduces configuration costs
- ✓ Device connectivity at the large scale
- ✓ Connectivity and intelligence at the edge

# The Bosch IoT Suite

## Solutions for device management



### Device management & software updates

How to remotely configure devices and gateways? How to efficiently update millions of devices and rollout of security updates?



### Bosch IoT Suite

#### Bosch IoT Suite for Device Management



“Using the Bosch IoT Suite meant that we didn't need to implement the technology ourselves. In other words, we were able to rely on the experts at Bosch.IO to provide the technology that powers our solution.”

 **Bosch IoT**  
Remote Manager

*RalfRapude,  
IT Project Lead,  
smight / EnBW*

- ✓ Remote configuration of the devices
- ✓ Software and firmware updates
- ✓ Device monitoring
- ✓ Diagnostics and troubleshooting

# The Bosch IoT Suite

## Solutions for data management



Data  
management  
  
How can I utilize large  
amount of data?



**Bosch IoT**  
Insights



*“Machines are becoming more and more complex in order to meet the ever-growing requirements of the market. But, at the same time, customers need to know that the machines are still easy to operate.”*

*Dr. Michael Gallmeier, Head of R&D,  
Holmer Maschinenbau GmbH*

- ✓ Process optimization through analysis of historical measurement data
- ✓ Condition monitoring
- ✓ Data can be sent to third parties

# POTENTIAL OF IOT DATA IS STILL UNUSED

20,4

billion networked devices  
in 2020

70%

of companies do not analyze  
and use IoT data today

99%

of data generated by IoT devices  
remains unused



# The Bosch IoT Suite

## IoT data management is being used in several projects



**Agriculture:**  
**Holmer Maschinenbau GmbH**

A service solution for remote diagnosis and maintenance with an interface to Farmpilot



**City:**  
**Move\_UK**

Vehicle data management to accelerate the introduction of automated technologies



**Automotive:**  
**Connected validation**

Evaluation of data in near real time with the help of connected brake systems and thus enabling early failure predictions

To generate business value from field data, the Bosch IoT Suite allows to manage the whole data pipeline in one solution.

# Use cases and references



# The Bosch IoT Suite

## Technical foundation for more than 250 IoT projects worldwide



## Data management

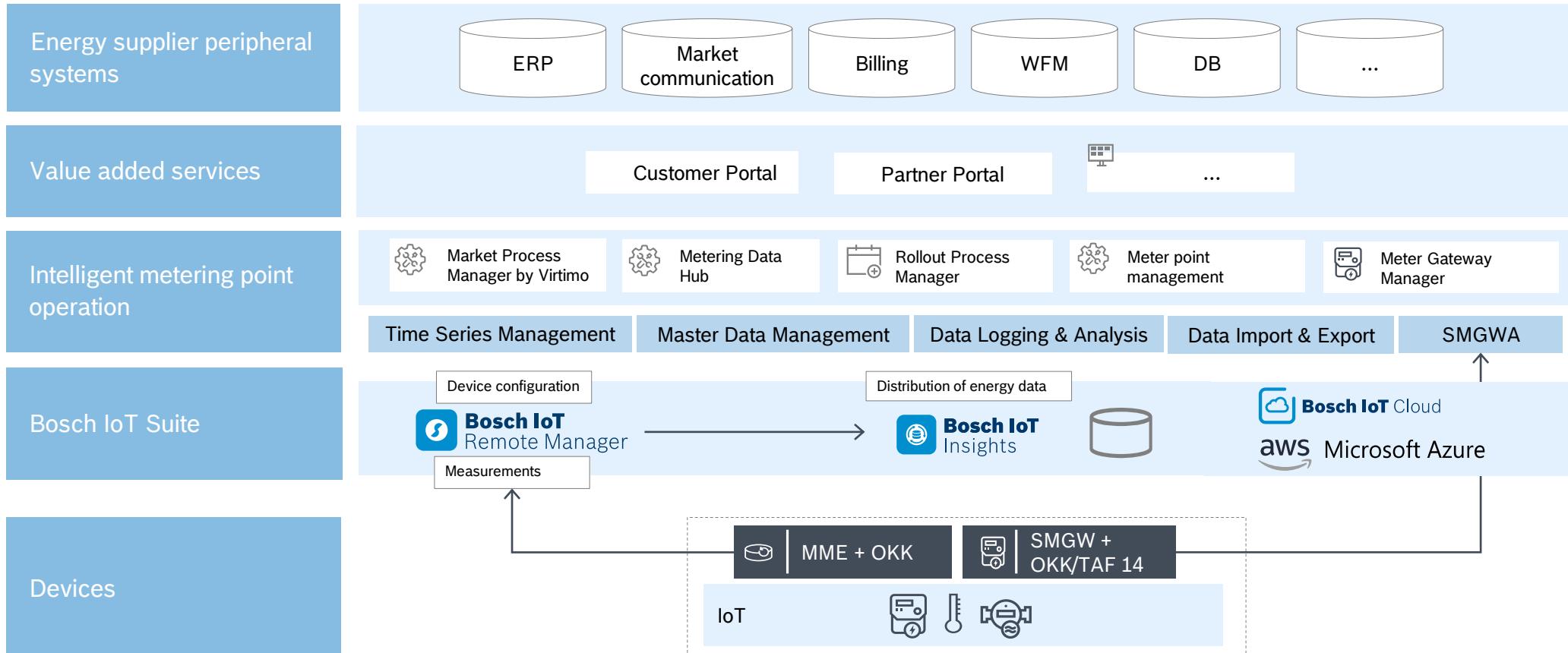
**EWE** – Value added services based on high-resolution metering data.

The energy supplier **EWE uses Bosch IoT Suite to manage high resolution metering data**. As a result, it can also be used for value-added services. This could be an application for analyzing consumption, for example: The largest electricity consumers in the household are displayed visibly and in detail. **This helps users to save energy.**



# Customer Case EWE

## Value added services based on high-resolution metering data



## Device management

### eStroller – revolutionizes comfort and safety

Among other things, this includes pushing and braking assistance. **The Bosch IoT Suite forms the basis for a smartphone app** that allows users to access additional product functions, such as an alarm function. In the future, **digital services** for the eStroller are also to be handled via the Bosch IoT Suite.



Learn more  
in this press  
release





## Software updates

### Connected Mobility

**Firmware updates over the air for passenger cars at Daimler:** vehicle owners no longer need to take their car to a workshop to have software updates installed manually. **More than 4 million cars** already receive updates over the air.

**The Bosch IoT Suite plays a key role** in creating, running, monitoring and adapting the update process.

## Device management & Data management

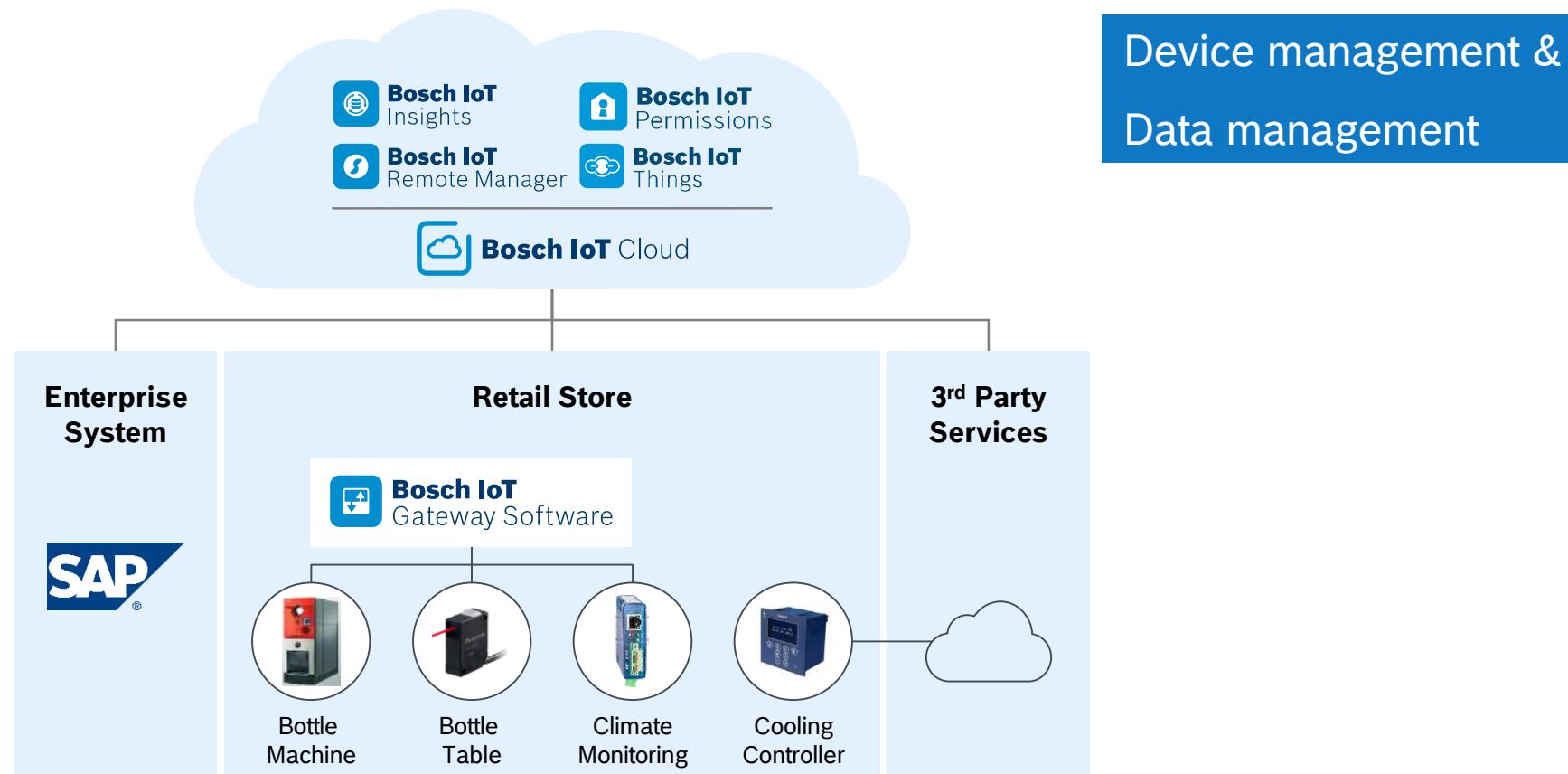
### The Connected Retail Store

A major European retailer identified IoT use cases to improve the efficiency of each store and increase overall customer satisfaction. The **Bosch IoT Suite is the foundation for use cases** like reverse vending machine monitoring and cold chain management.



# The Connected Retail Store

## Digital transformation of a major European retailer



## Device management

spexor is a portable alarm device. grow platform GmbH for spexor relies on the Bosch IoT Suite, software and architecture expertise from Bosch.IO

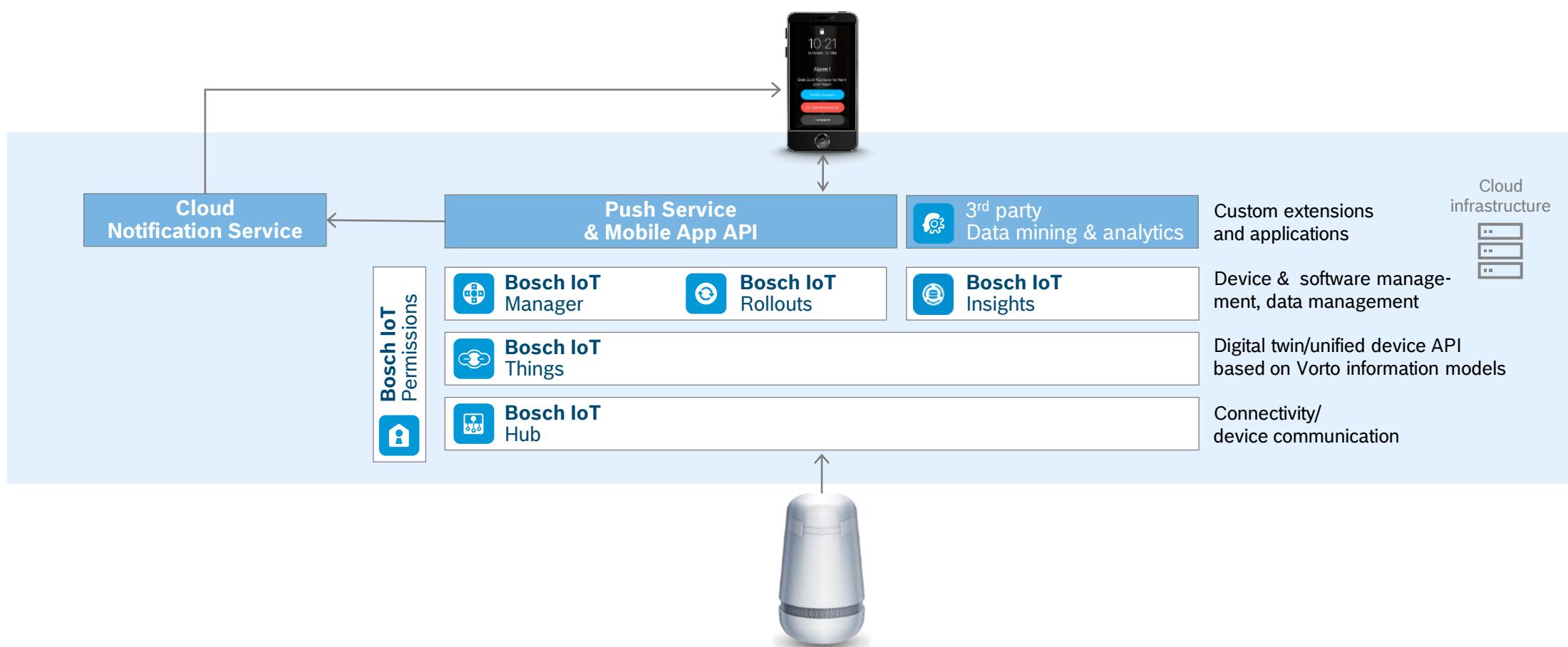


Learn more  
about spexor



# Customer case: spexor Architecture based on Bosch IoT Suite

Device management



## Device management

### Bosch Singapore campus: Smart building concept turned reality.

Use cases implemented at the Bosch Singapore campus:

- ▶ Lift monitoring
- ▶ Light monitoring & control
- ▶ Occupancy tracking
- ▶ Air quality monitoring
- ▶ Asset tracking
- ▶ Carpark monitoring
- ▶ Object detection
- ▶ Bosch assist chatbot
- ▶ Smart evacuation

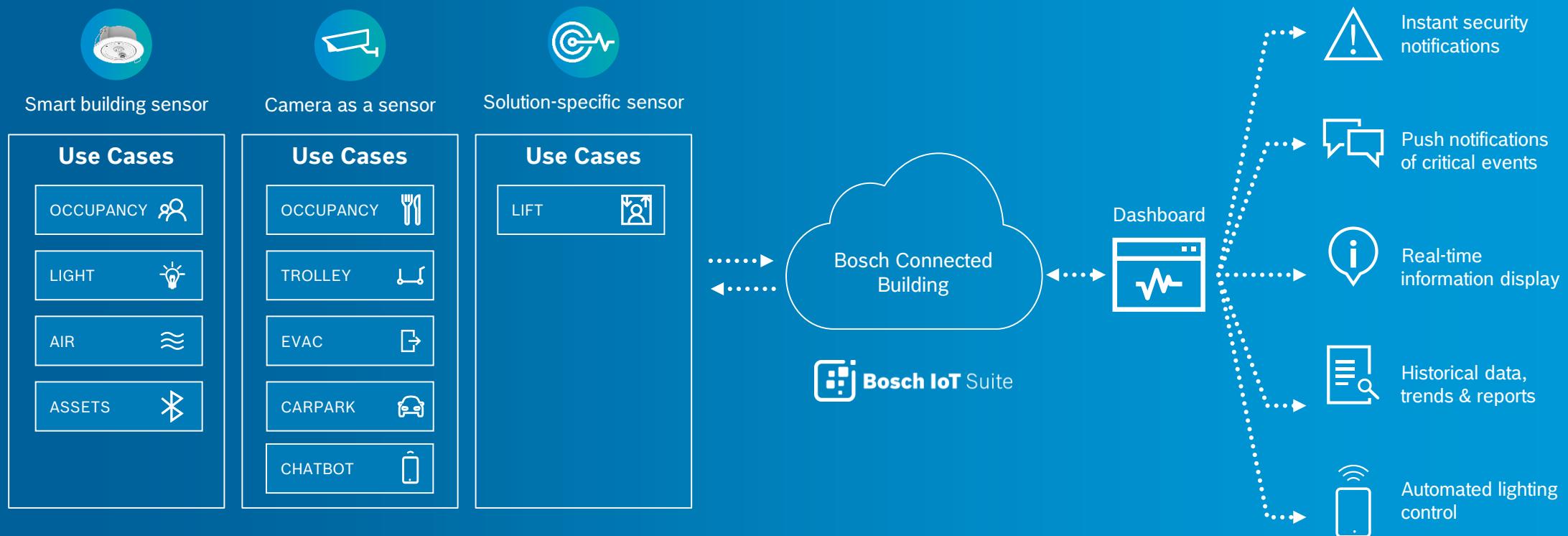


Learn more in  
this blog post



# Bosch Singapore connected campus System architecture

Device management





Device management

QIVICON platform for smart home uses the Bosch IoT device management

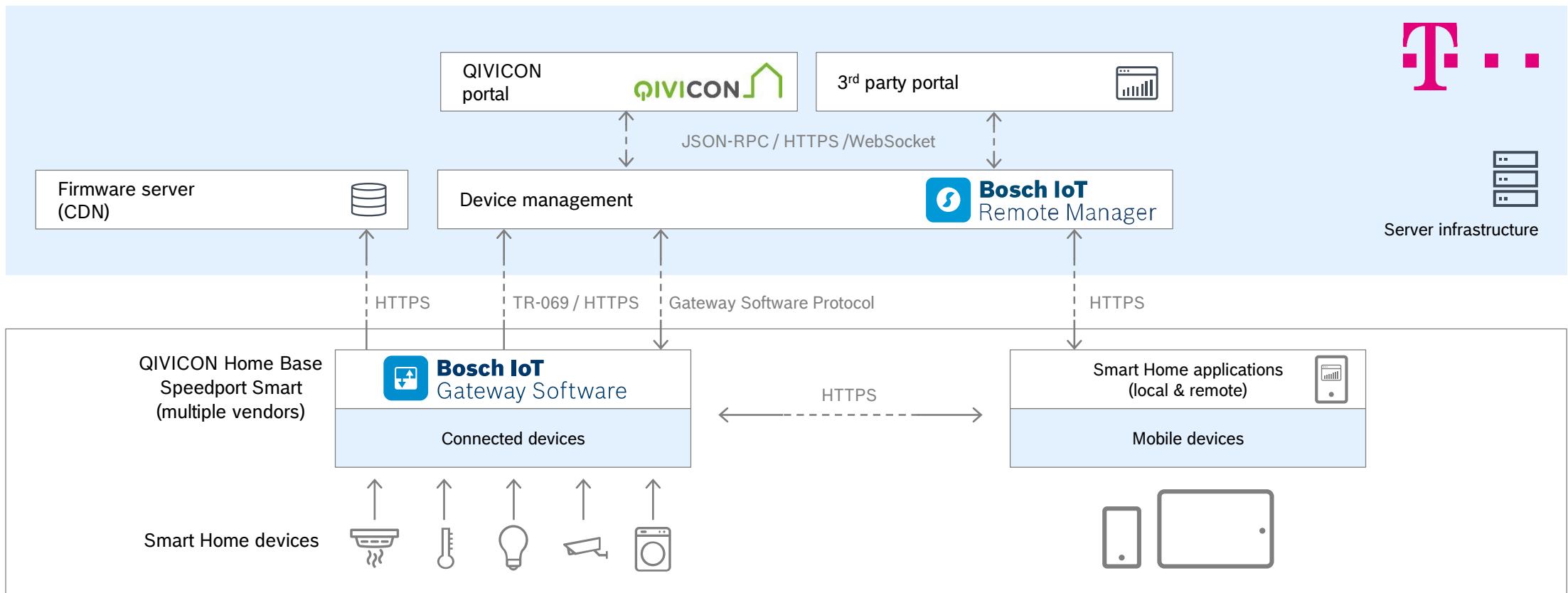
Learn more in  
this blog post



# Customer case: Qivicon

## Smart home platform powered by the Bosch IoT Suite

Device management



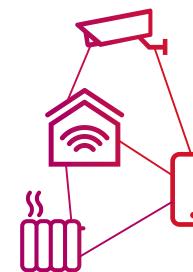
Device management

**Deutsche Telekom's Speedport Smart**  
provides smart home functionalities out of the  
box – based on Bosch IoT Gateway Software



A photograph of a single-story house with white horizontal siding, a grey shingled roof, and a prominent front porch supported by white columns. The front door is red with glass panes. The house is set in a landscaped garden with various shrubs, flowers, and a small white garden bench on the porch.

## Device management

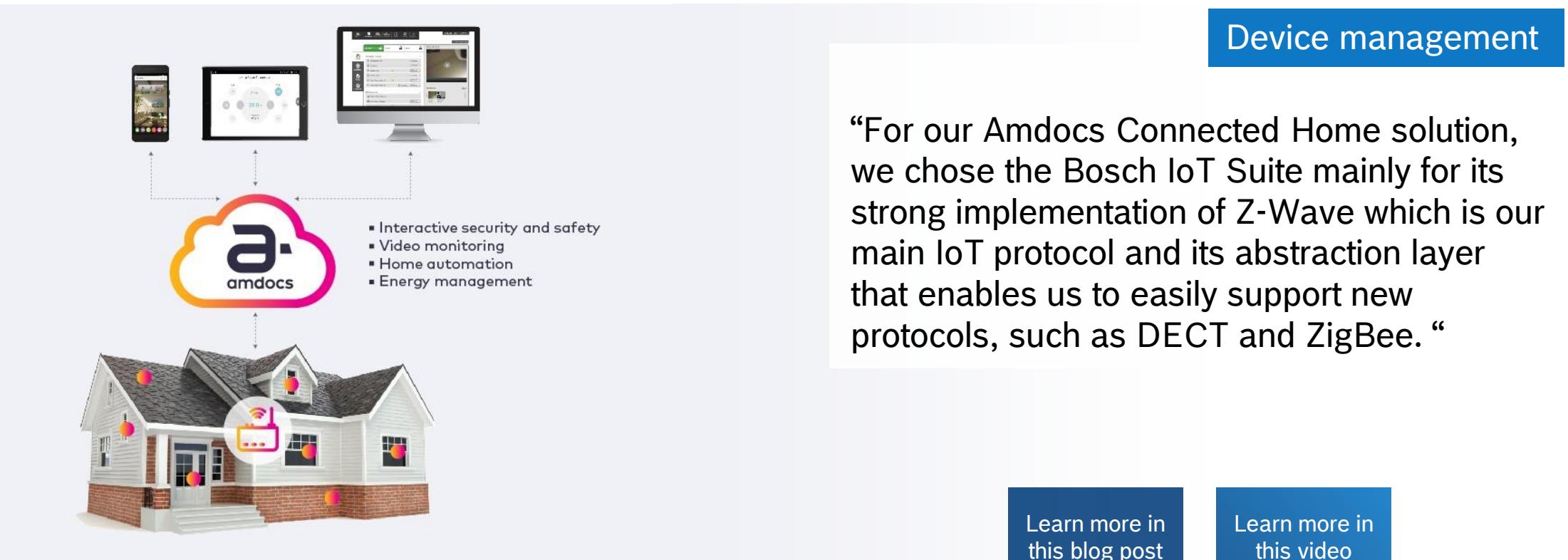


>5.2 million Smart Homes

158 supported device types  
only in one customer project

# Amdocs Connected Home

## Services for Home Security, Monitoring, Automation, Energy and Wellness & Assisted Living



Source: Amdocs

### Device management

“For our Amdocs Connected Home solution, we chose the Bosch IoT Suite mainly for its strong implementation of Z-Wave which is our main IoT protocol and its abstraction layer that enables us to easily support new protocols, such as DECT and ZigBee. “

Learn more in  
this blog post



Learn more in  
this video



### Busch-Jaeger Comfort Touch

Home Controllers based on Java/OSGi technology

- ▶ Java as implementation platform for Busch-Jaeger's smart home offering
- ▶ Java programming language provides the robustness and reliability needed for a convenience focused device which needs regular updates.
- ▶ The Bosch IoT Gateway Software manages and connects the devices.
- ▶ The Bosch IoT Remote Manager securely controls the software deployment remotely from the cloud.



Learn more in  
this blog post



## Bosch gas boiler

From physical products to digital services with added value



### Physical product

Gas boiler (100 years ago)



Learn more in  
this video



Digital

### Digital product

"HomeCom Pro"



Physical

### Physical product

Smart gas boiler



Product

### Digital services

Web-based control  
Preliminary error assessment  
Remote access for service technician

### Physical service

Hot water & warm air



Service

## Device management

EnBW/SMIGHT implements IoT solutions with the Bosch IoT Suite



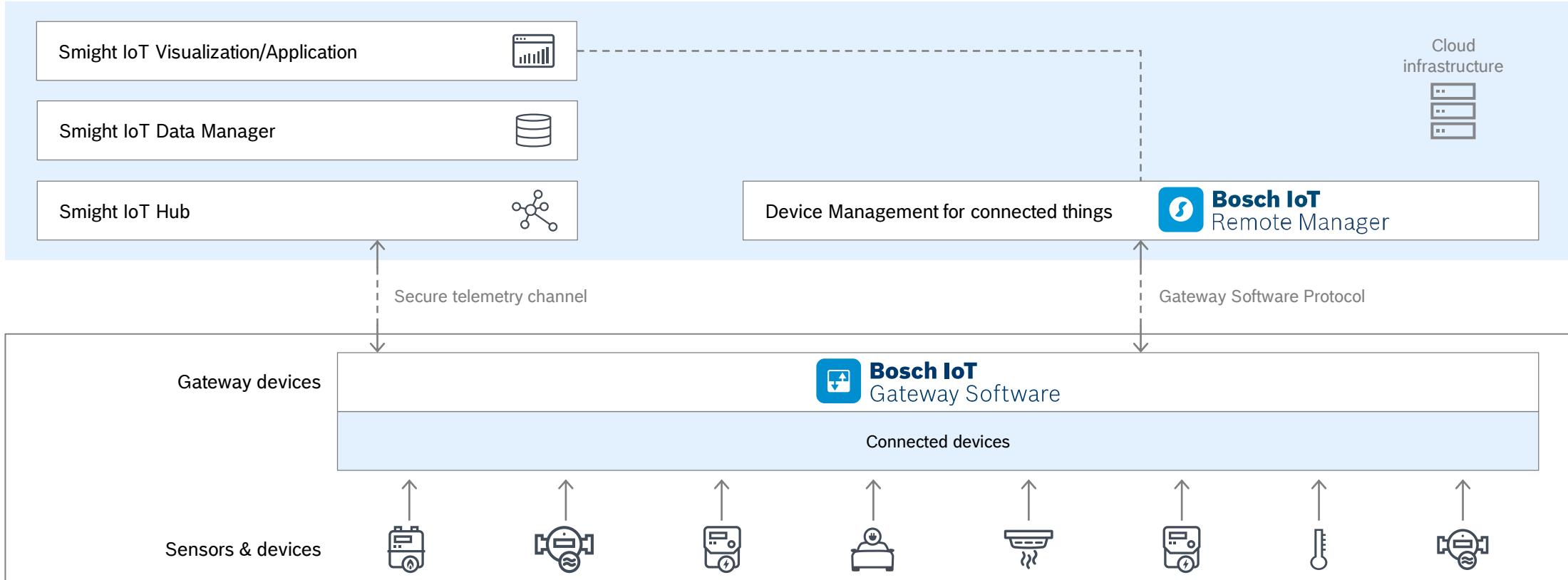
Learn more on  
this website



# Customer case: EnBW/SMIGHT

## Bosch IoT Suite for device management and edge computing

Device management



A close-up, low-angle shot of several modern cars parked in a row. The focus is on the front left of a white car in the foreground, showing its headlight and part of the front grille. Behind it, a blue car is visible, followed by a white car, and then more cars in the background. The ground is wet, reflecting the lights of the cars.

Software updates

## Reliably connecting vehicles

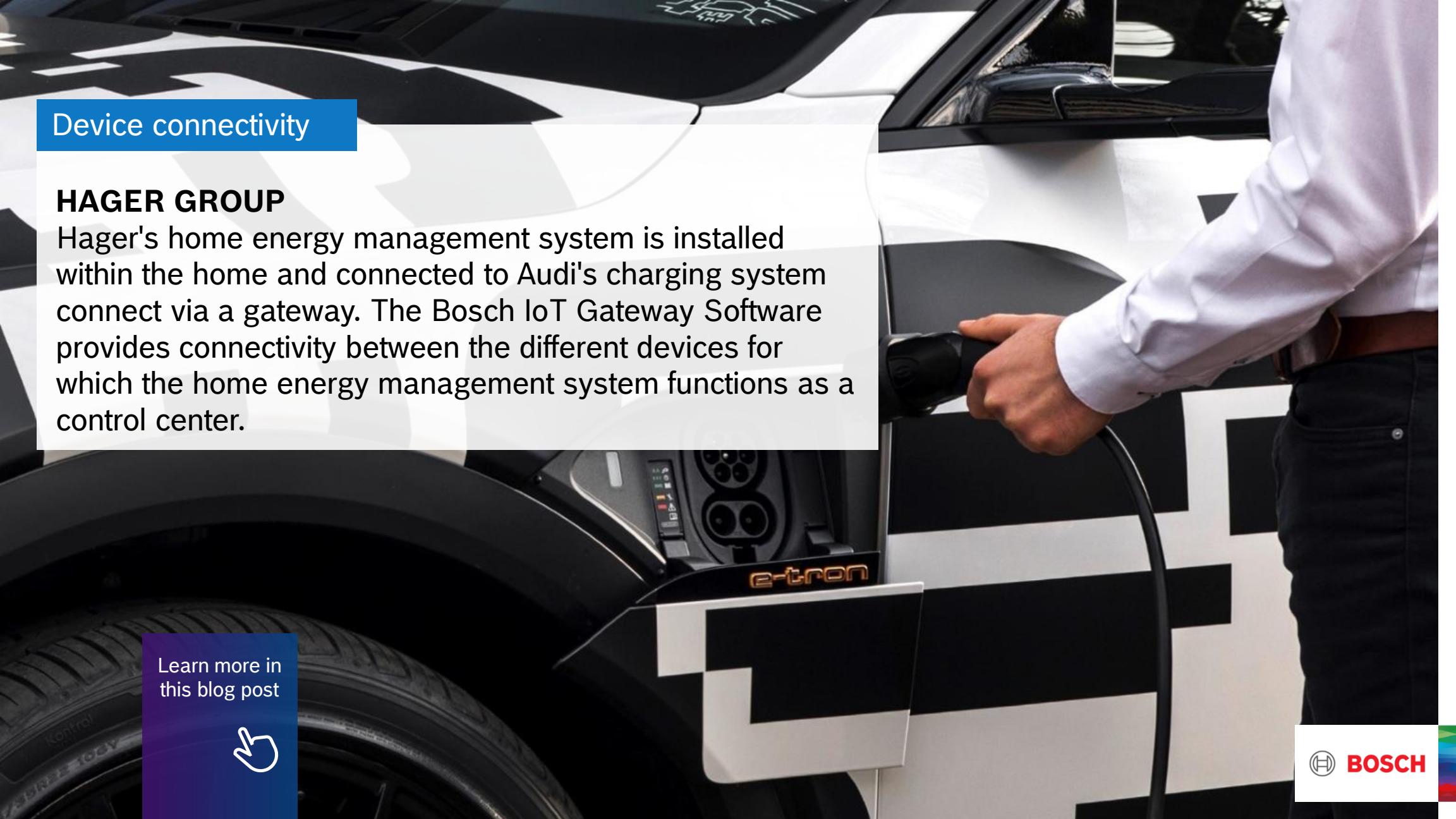
Already more than 5 million connected cars on the road

## Device connectivity

### HAGER GROUP

Hager's home energy management system is installed within the home and connected to Audi's charging system connect via a gateway. The Bosch IoT Gateway Software provides connectivity between the different devices for which the home energy management system functions as a control center.

Learn more in  
this blog post



# Customer Case: Hager Group

Device connectivity

## Home energy management: standards play an integral role

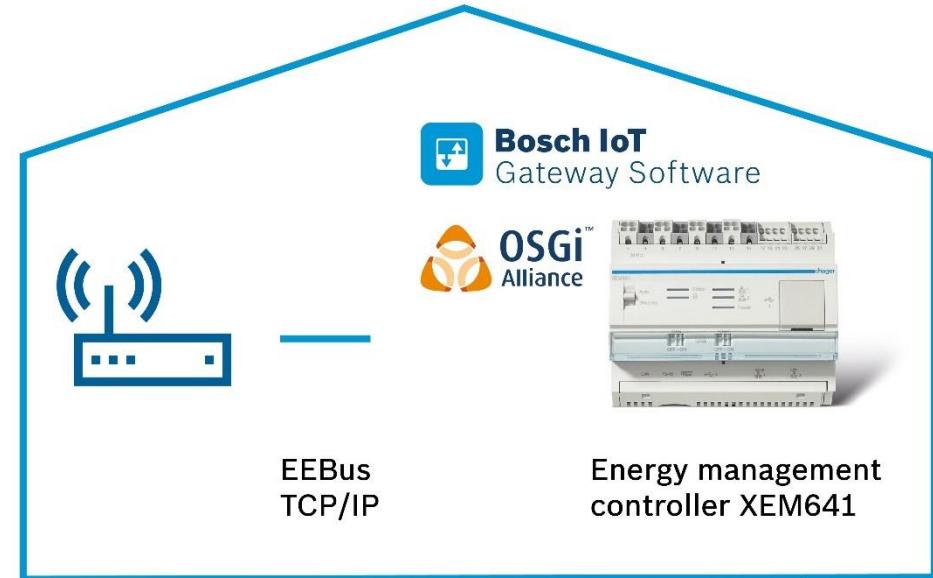


Audi e-tron

ISO 15118



e-tron charging  
system connect  
Mode 2 AC  
11 kW / 22 kW



Source: Hager Group

## Device management

### Greenhouse Guardian

Uses Bosch IoT Gateway Software to connect sensors monitored by the Bosch IoT Remote Manager. Bosch IoT Permissions ensures that the data captured in the Bosch IoT Cloud can only be accessed by the right people.

Learn more in  
this blog post



Learn more in  
this video



## Data management

### HOLMER Maschinenbau GmbH

Telematics solution EasyHelp 4.0  
for HOLMER machines

A service solution for remote  
diagnosis and maintenance with an  
interface to Farmpilot, which  
exchanges order and machine data.

Learn more in  
this blog post



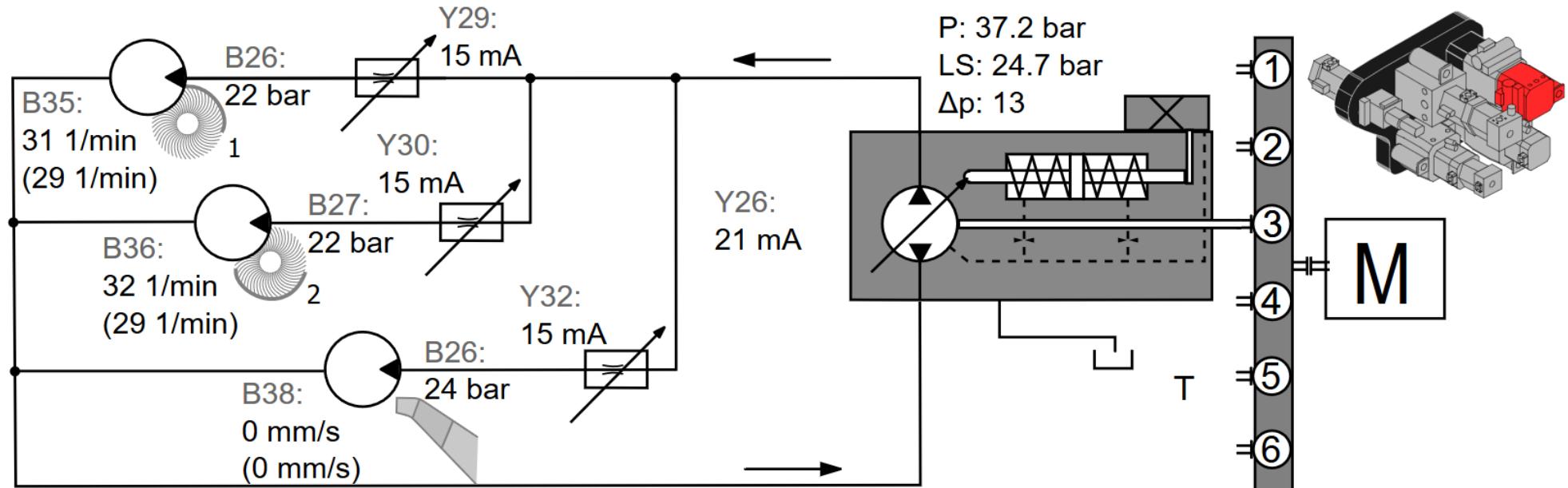
Learn more in  
this video



ENS1S2 Fahrantrieb KRS3SB Roder Hauptantrieb Roder Ruttelschare Vorlauf Motor Signale

Turbine 1, Turbine 2 & Discharge Elevator Drive

## Condition of the machine subsystem



Startup Conditions Startup Conditions Turbine 1 & 2



 **Sensing:** The Bosch IoT Gateway Software connects with sensors to measure and transmit data (e.g. air pressure, wind speed, rainfall, oxygen, water temperature)



**Analyzing & predicting:** Bosch IoT Remote Manager provides data to be used by predictive models and converted into 3 day harvest area forecast



**Informed decision:** Farmers can avoid weather-related and costly harvest closures

Learn more in this blog post



Device management &  
Data management

## The Internet of Oysters

The Yield, an Australian AgTech business, uses the Bosch IoT Remote Manager to connect oyster farms.

Their first IoT product was designed to help oyster farmers reduce the risk of unnecessary harvest closures caused by weather.



Bosch IoT Suite

[www.bosch-iot-suite.com](http://www.bosch-iot-suite.com)

Follow us on



Bosch ConnectedWorld Blog

