

Internet of Things im Gebäude

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GNI-Seminare

An unseren GNI-Events gewähren wir Einblicke in neue oder sanierte Gebäude unterschiedlichster Art. Ihre Gemeinsamkeit: Sie könnten ohne moderne Gebäudetechnik und Gebäudeautomation nicht genutzt und betrieben werden.

IoT im Gebäude - Quickstart - Modul 1

Ort: Bahnhof Zürich, Au Premier

Datum: 14.11.2019 14.00 - 17.00 Uhr

Sei es über Internet oder die firmeninterne Informatik – wir alle leben in einem riesigen Netzwerk von Netzwerken, das es ermöglicht, alles mit allem zu verbinden, das heisst Menschen mit Menschen, Maschinen oder Geräten. Jeden Tag müssen sich Bauherren und Investoren, die wettbewerbsfähig bleiben wollen, dringender um die Konnektivität ihrer Gebäude kümmern.

Die Gebäude Netzwerk Initiative bietet eine neue Serie von Schulungen über IoT im Gebäude an. Als Start, steht ein Einführungsnachmittag für alle auf dem Programm.

Unsere Referenten:

Prof. Thomas Amberg, Fachhochschule FHNW und Mitglieder des Projektteams.

Das komplette Programm kann hier heruntergeladen werden.

[> Anmeldung](#)

IoT im Gebäude - Anwendung - Modul 2

Achsenflexible, integrale Raumautomation

IoT im Gebäude - Praxis/Technik -Modul 3

**Unsere Events sind für
GNI-Mitglieder, Studenten
und Medien kostenlos!**



Mitglied

**Die GNI setzt sich für die
Branche ein, informiert
und vernetzt Spezialisten
untereinander.
Erfahren Sie hier, was
Ihnen eine Mitgliedschaft
bringt.**

[> Mitglied werden](#)

**Folgende Firmen unterstützen
die IoT-Kurse:**

Gold

ABB Technikerschule
Technik. Informatik. Wirtschaft. Management →





Thomas Amberg



Edit profile

Thomas Amberg

@tamberg

Maker/👨🔧 engineer trying to work on stuff that matters. Founder [@yaler](#). Organiser [@iotzh](#), [@makerfairezh](#). Embracing the future. Becoming a teacher.

📍 Zürich 🔗 [tamberg.org](#) 📅 Joined December 2006

3,796 Following 2,143 Followers





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IoT Zurich

Zürich, Switzerland

2,316 members · Public group

Organized by Thomas Amberg and 1 other

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What we're about

This meetup group is for everybody interested in the Internet of Things (IoT), how it works and what it means for our future. Together we learn about use...

Organizers



Thomas Amberg and 1 other

Message

Tätigkeiten an der FHNW

Dozent für Internet of Things am Institut für Mobile und Verteilte Systeme

Forschungsschwerpunkt

Internet of Things (IoT)

Lehrtätigkeiten

- IoT Engineering
- System-Programmierung

Hochschule



Hochschule für Technik

Das Ausbildungszentrum für Ingenieurwesen, Informatik und Optometrie. In der Forschung erzeugen wir Wissen und Lösungen für Industrie und Wirtschaft.



Kontakt



Prof. Thomas Amberg

Dozent für Internet of Things

Telefonnummer

+41 56 202 84 24 (Direkt)

E-Mail

thomas.amberg@fhnw.ch

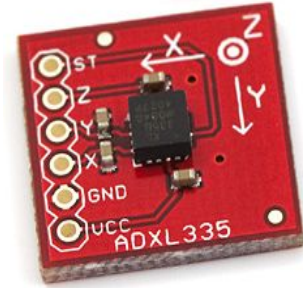
Fachhochschule
Nordwestschweiz
FHNW

Hochschule für Technik
Bahnhofstrasse 6
5210 Windisch

Internet der Dinge

Internet of Things (IoT)

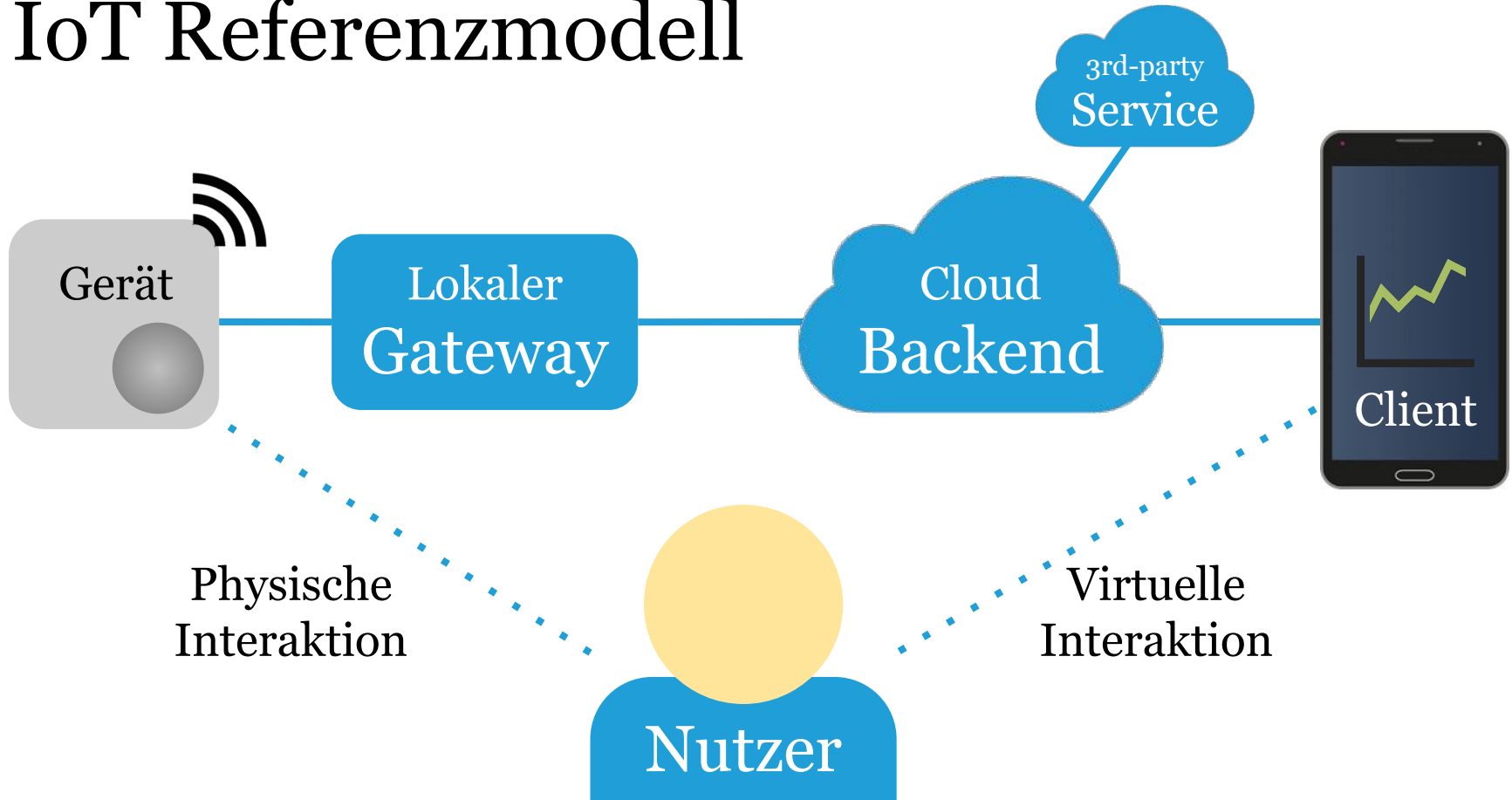
Verschmelzung von Internet
und physischer Welt.



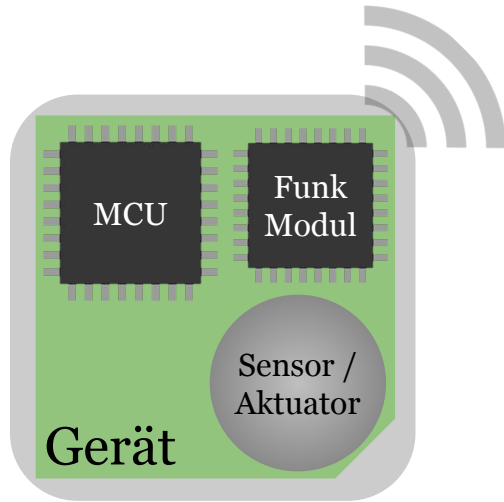
"Internet-verbundene Computer,
mit Sensoren und Aktuatoren." — @tamberg

"Physische Objekte mit Web API." — @hansamann

IoT Referenzmodell



IoT Device



Connectivity



Clear, rich sound

Enjoy better speech understanding in noise¹, less listening effort² and be amazed at how well your hearing aids perform from the first fit and every time you wear them.



Connects to smartphones, TV and more

Phonak Audéo Marvel hearing aids connect directly to either your iOS or Android smartphone or other Bluetooth® enabled devices. Use them for hands-free calls, listening to TV, music, e-books, podcasts and so much more.





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MARKETS

DEVELOP WITH BLUETOOTH

SPECIFICATIONS

RESOURCES

New mesh networking resources now available

See what's new

**Develop
with
Bluetooth**

Learn how to bring
Bluetooth to market



01. JOIN



02. BUILD



03. QUALIFY



04. BRAND

Dual-Radio Performance, Gigabit Speeds

The UniFi AC Lite AP delivers 5x the performance of the first-generation UniFi AP while still maintaining Ubiquiti's disruptive pricing strategy.



ADVANCED PERFORMANCE FOR THE FUTURE



Sleek, Ultra-Compact Design



The Mobile
Broadband Standard



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5G-ACIA, Non-Public Networks for Industrial Scenarios

September 3, 2019

5G-ACIA have published a short [paper](#) to describe the industrial (IIoT) deployment scenarios for 3GPP-defined 5G private networks, looking at how organisations can apply 5G technologies on their own premises, either as an independent 5G network or in conjunction with a public network.

[READ MORE ...](#)

Search

3GPP Website:



Search and download specs, docs, CRs and more from the 3GPP FTP Server:

[ADVANCED FTP SEARCH](#)

More News:



Low Power Wide Area Networks



What is LoRaWAN®?

The LoRaWAN® specification is a Low Power, Wide Area (LPWA) networking protocol designed to wirelessly connect battery operated 'things' to the internet in regional, national or global networks, and targets key Internet of Things (IoT) requirements such as bi-directional communication, end-to-end security, mobility and localization services.

LoRaWAN® for developers

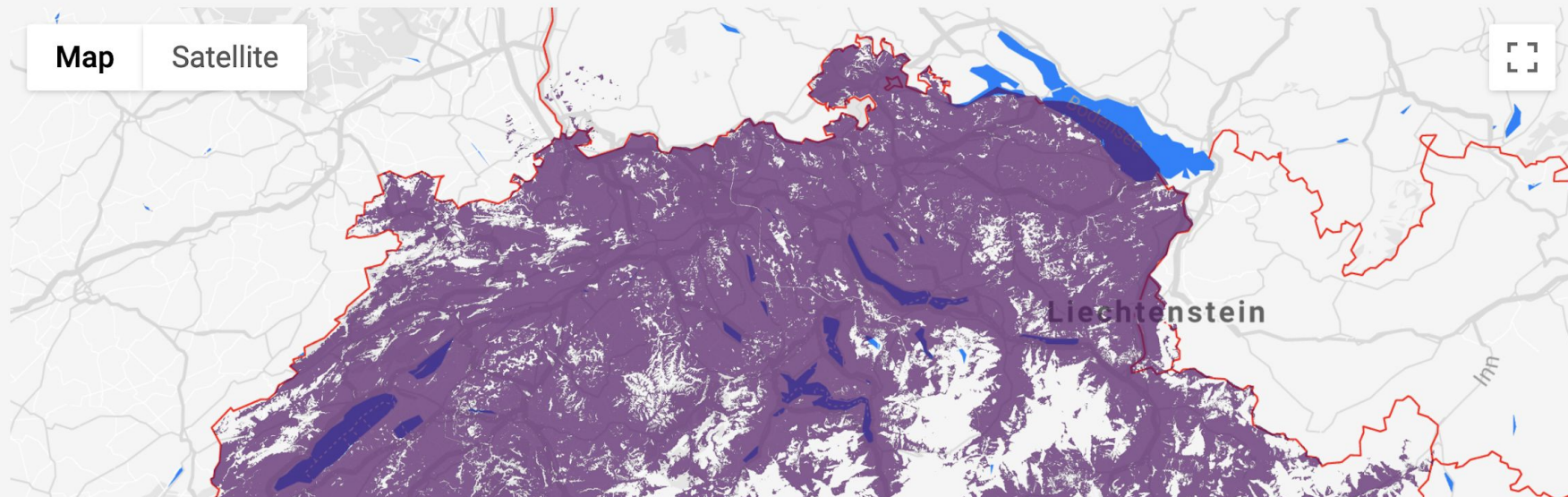
Read more about the LoRaWAN specification

LoRaWAN® for Developers



Network coverage map

The Swisscom LPN currently covers 96.7% of the Swiss population. The information contained in this map is based on network coverage simulations, so small variations in coverage may occur. Map dated 14 June 2019.





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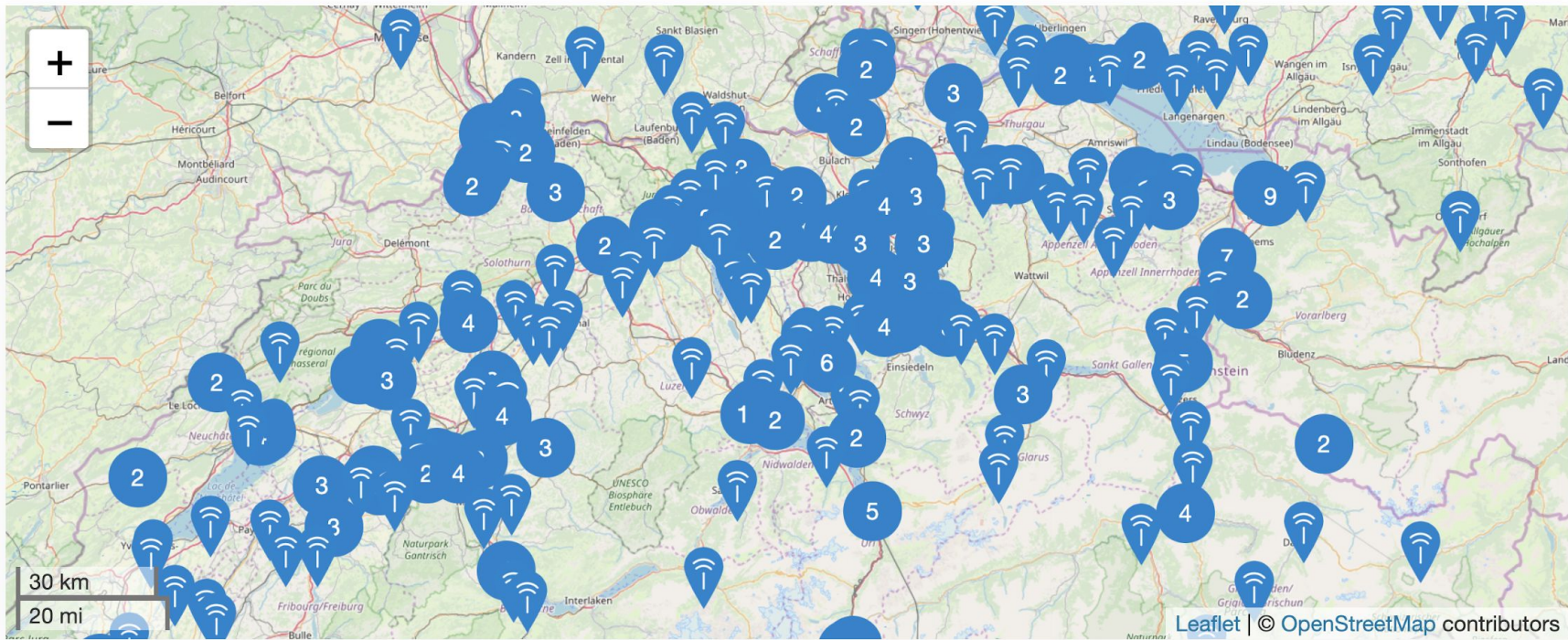
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Ultrasonic Water Metering

Hanbit's ultrasonic water metering products utilize LoRaWAN-based connectivity to enable the near real-time transmission of accurate water use data, even at very low flowrates.

[Read the Press Release »](#)



Smart Utility Starter Package

Digimondo's end-to-end smart utilities starter package based on Semtech's LoRa devices simplifies the deployment and operation of a LoRaWAN network, allowing municipal utilities insight into the business benefits of LoRa-based applications.

[Read the Press Release »](#)



MeDa Smart Meters

Seluxit integrated Semtech's LoRa devices into smart



Intelligent Water Metering

Hangzhou Water Meter Co. has incorporated LoRa

DEVELOPER PORTAL

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LoRaWAN Academy

LoRaWAN Academy provides IoT education for all.

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LoRa Alliance

Supporting global adoption of the LoRaWAN open standard.

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Wireless & RF Selector Guide

Ubiquitous Computing

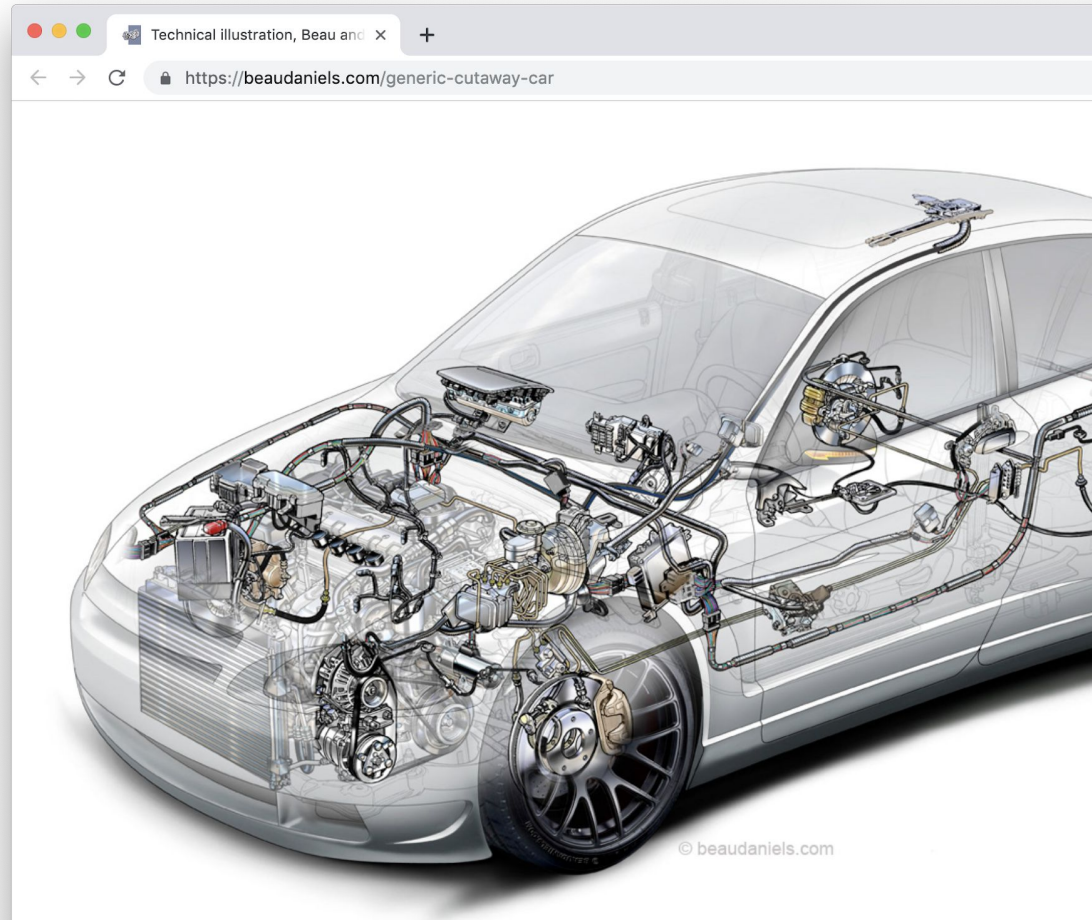
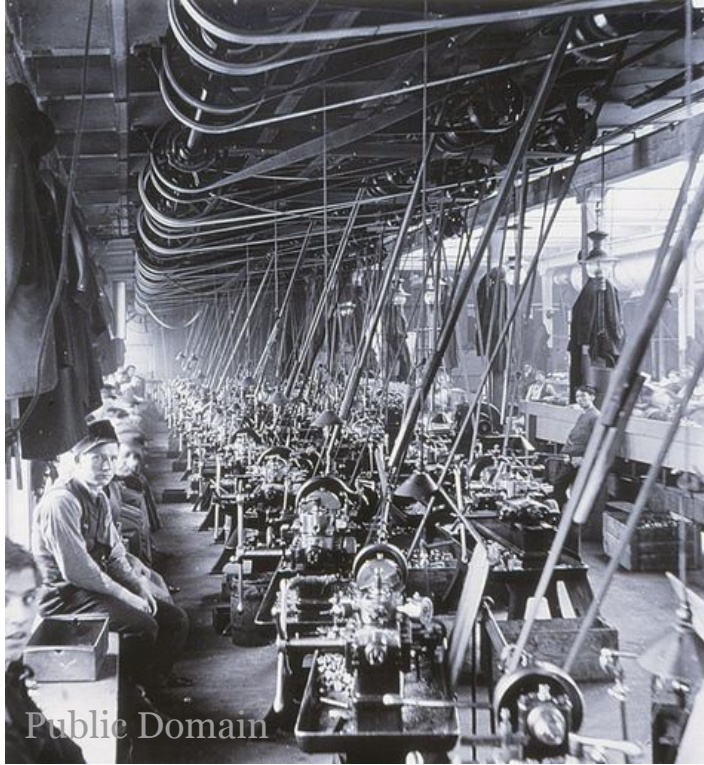
Ubiquitous computing

"The idea of integrating computers seamlessly into the world at large [...] *Ubiquitous computing*"

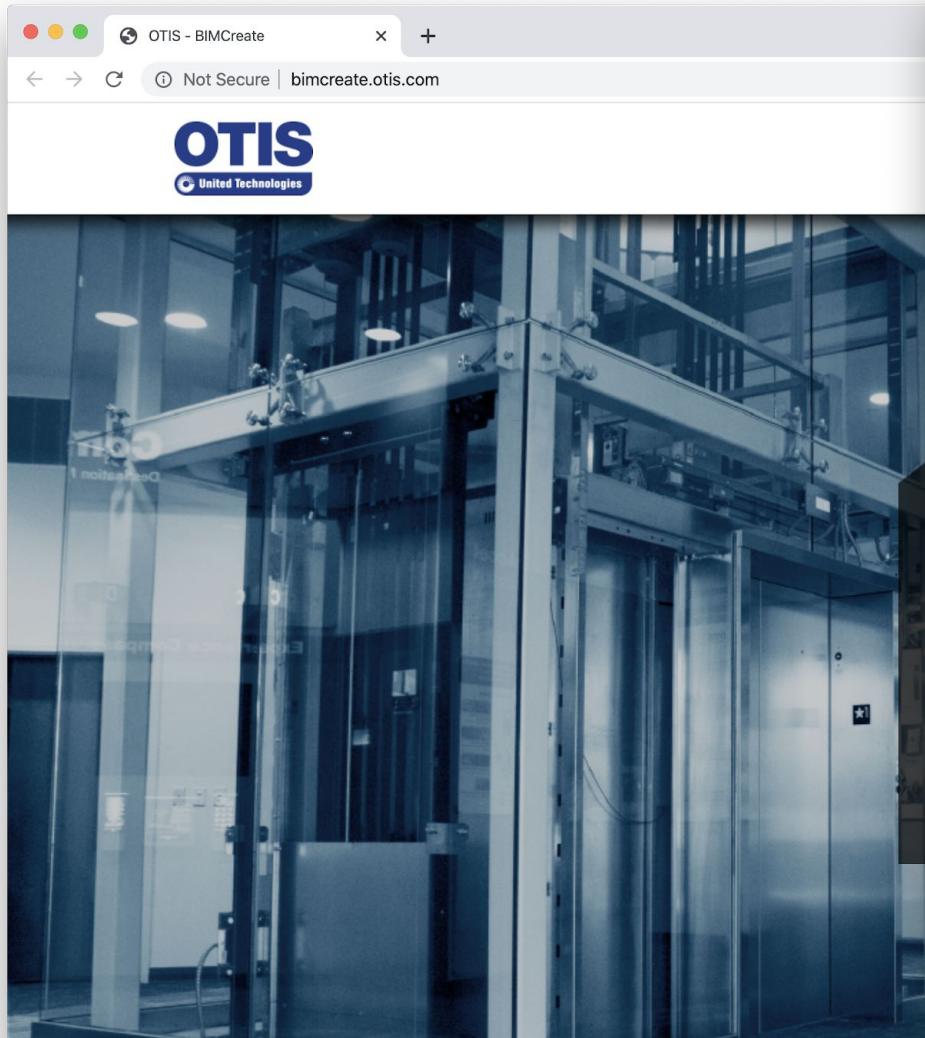
"How do technologies disappear into the background?
The vanishing of electric motors may serve as an instructive example"

— Mark Weiser in [The Computer for the 21st Century](#)

Motoren: 1 vs. n



VEHICLE ELECTRICAL SYSTEM.



A screenshot of a web browser displaying the Schindler 3300 - The Passenger website. The browser's address bar shows "schindler.com/com/internet/en/mobility-solutions/products...". The page features three distinct sections, each with a diagram and a text block. The first section shows a diagram of the elevator car with floor numbers 18, 19, and 20. The second section shows a diagram of the elevator's mechanical components, including a pulley and cables. The third section shows a diagram of the elevator's interior design, featuring multiple layers of orange and red panels.

Solid performance

Engineered to meet Swiss standards of precision, the Schindler 3300 has reliability and comfort built right in. It transports up to 15 passengers, travels up to 20 floors at speeds of 1.0 m/s or 1.6 m/s. Enjoy a worry-free operation, all day, every day.

Space efficiency

The Schindler 3300 passenger elevator fits standardized shafts, but with a larger car. Using smaller technical components makes for a roomier, more comfortable car that holds more passengers. Personal freedom, just when needed.

Choice of design

The Schindler 3300 passenger elevator has an interior that suits you and your building. It offers a design choice of several ready-made décor lines for the perfect match. With a choice of more than 40 colors for walls and floors - from contemporary to brilliant - the right interior ambiance is easy to create.

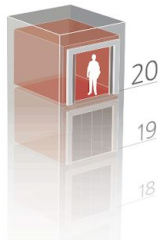
Form and function united

The Schindler 3300 passenger elevator unifies form and function. Its design options will match your building architecture and it is system engineered making it easy to plan into your residential and small to mid-size commercial buildings.



Future Ready with Schindler Ahead

This product is fully compatible with [Schindler Ahead](#), our IoT portfolio of cloud-based products and services. Schindler Ahead connects you to a wide range of digital solutions for greater convenience in daily operations, including remote diagnostics and predictive maintenance. IoT connectivity also creates new options for advertising, communication and in-car entertainment.



Solid performance

Engineered to meet Swiss standards of precision, the Schindler 3300 has reliability and comfort built right in. It transports up to 15 passengers, travels up to 20 floors at speeds of 1.0 m/s or 1.6 m/s. Enjoy a worry-free operation, all day, every day.

Why Software Is Eating the World

by Marc Andreessen

how innovation happens •
nature of the firm & evolving
institutions



*This article was originally published in **The Wall Street Journal** on August 20, 2011.*

This week, Hewlett-Packard (where I am on the board) announced that it is exploring jettisoning its struggling PC business in favor of investing more heavily in software, where it sees better potential for growth. Meanwhile, Google plans to buy up the cellphone handset maker Motorola Mobility. Both moves surprised the tech world. But both moves are also in line with a trend I've observed, one that makes me optimistic about the future growth of the American and world economies, despite the recent turmoil in the stock market.

In short, software is eating the world.

More than 10 years after the peak of the 1990s dot-com bubble, a dozen or so new

Effizienz, Bequemlichkeit, Einsichten



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Always Know When to Collect & Prevent Unsightly Overflows with Smart, Connected Waste Bins

LEARN ABOUT BIGBELLY'S SMART WASTE BINS

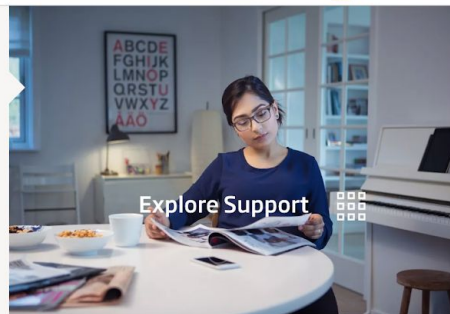
Get a notification in your hearing aids when the doorbell rings.

[Click for full guide](#)



Receive a notification when your home alarm system goes off.

[Click for full guide](#)

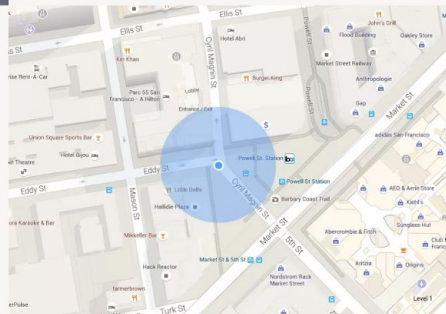


Explore Support



Send a text message or email to a caregiver when the hearing aid battery is low.

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Have your hearing aids switch to a preferred listening program based on your GPS location.

[Click for full guide](#)

Have your hearing aids go into a special listening program when you make a voice command.

[Click for full guide](#)



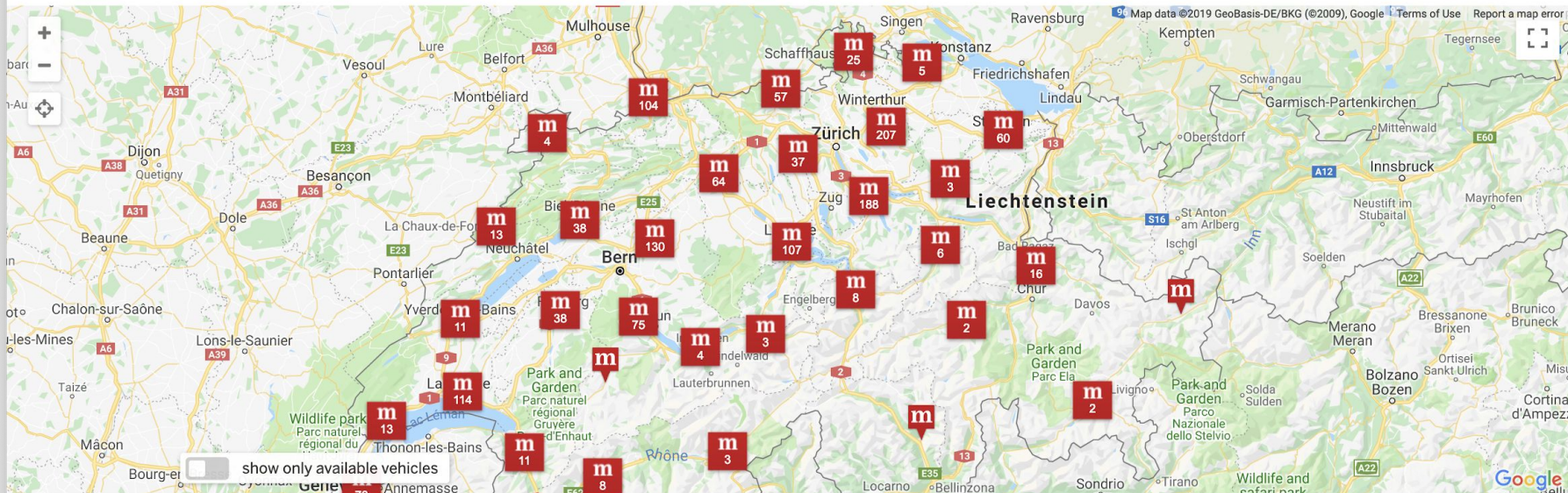


Solutions

Vehicles & stations

How it works

Opening a new station



Find a station...



02/18/2019 / 09:00 - 02/18/2019 / 12:00



All



Go! ↗



Good value

Unlike your own car, you only pay when you use our car sharing vehicles.



Transparent

Mobility is all inclusive: fuel, servicing and insurance.



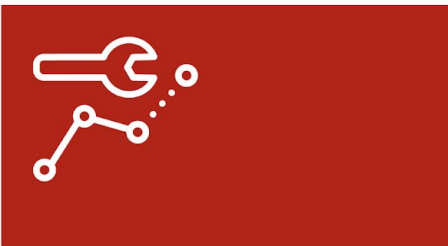
Flexible

Rent for as little as one hour with round-the-clock self-service.



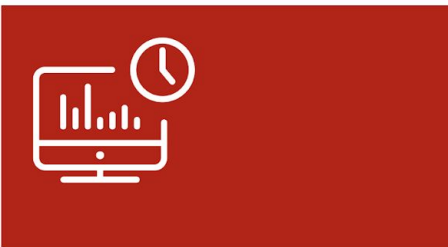
Convenient

Without a worry in the world: whether you are after somewhere to park, a



Predictive maintenance

Accurate diagnosis is the first step towards fewer and shorter down-times, and ultimately higher customer satisfaction. Schindler Ahead solutions help identify irregularities before they affect the equipment's performance. With precise diagnostics, service interruptions can be minimized or even avoided.



Real-time information

Schindler Ahead has developed the industry's first fully closed-loop platform that enables real-time flow of information. This greatly improves the day-to-day operations and communication between service technician, building manager and residents.



Personalized solutions

Depending on the location, volume of passengers and traffic patterns, the level of care needed for elevators varies significantly. With Schindler Ahead, customers can gain a wide selection of customization options and choose the ones that best suit their everyday needs.



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971.40 GBX ▲ +22.60

🌐 GLOBAL ▼

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A large, high-resolution photograph of a Trent engine family. The image shows a close-up of the engine's fan and compressor sections, with the fan blades in the foreground and the compressor in the background. The engine is set against a clear blue sky.

Discover the #PowerOfTrent

Latest updates on our Trent engine family

Connected Products



It's beautifully designed to keep you comfortable and help save energy.



Proven energy savings.
Can pay for itself in two years or less.¹



Turns itself down when you're away.



Control it from anywhere.²



Remote temp sensing.
[Learn more >](#)

Smart lights Smarter controls

Philips Hue is not just a smart bulb, it's a smart lighting system. The smart lights, Hue Bridge, and smart controls will forever change the way you experience light.



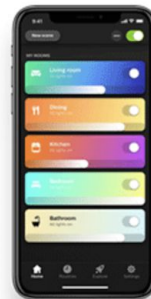
Hue lights

These smart and energy-efficient LED lights come in a wide variety of shapes, sizes, and models to suit your space.



Hue Bridge

The heart of your Philips Hue system, the Bridge acts as a smart hub, connecting your devices to your smart lights. You can add up to 50 Philips Hue lights and accessories to one Bridge.

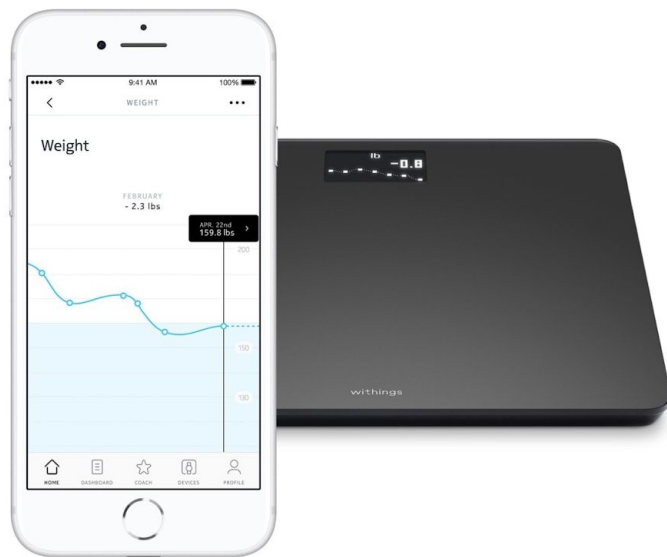


Hue app

Control your smart lights quickly and conveniently with the Philips Hue app.

Meet your new accountability partner

Body offers a complete weight tracking experience tailored to individuals seeking easy, effective weight management. Weighing in is just the first step. Each session also provides instant feedback via weight trend and BMI screens, plus automatic sync to a free app on your smartphone, so you can track progress any time, anywhere.



Turn a Big Lamp on and Little Lamps which you've given away turn on too. Anywhere in the world.

Use the Good Night Lamp to tell a loved one 'now's a good time for a chat', 'I'm thinking of you' or 'call me when you get home'. You decide. As your family grows or moves away, you can add as many Little Lamps as you want.



Active Assisted Living

caru

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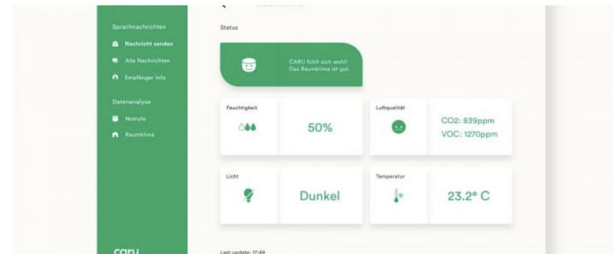
Smart Sensor

Der CARU Smart Sensor wird in der Wohnumgebung aufgestellt. Er erfasst verschiedene Raumparameter, lernt wie sich ein Bewohner normalerweise verhält und erkennt Abweichungen davon.



Web App

Die CARU Web App erlaubt individuelle Konfigurationen und dient als Plattform zur Kommunikation zwischen Bewohnern, Angehörigen und Pflegern.



Sicher. Leicht. Vielseitig.



Direkte Kommunikation

Die natürlichste Art zu kommunizieren ist über die Sprache. Daher versteht CARU einfache Sprachbefehle und kann eine Telefonverbindung zu einer Vertrauensperson aufbauen.



Indirekte Kommunikation

CARU empfängt Sprachnachrichten und Audiodateien, die jederzeit per Knopfdruck oder Sprachbefehl abgehört werden können.



Notruf

CARU erkennt wenn Sie Hilfe brauchen und stellt zuverlässig und schnell eine Pflege- oder Notrufverbindung her.



Raumklima

CARU informiert Sie über die aktuelle Luftqualität. So wissen Sie jederzeit über das Klima in Ihrem Wohnraum Bescheid und wie Sie es verbessern können.

caru

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CARU ist Plug & Play



Schnell

Zur Installation benötigt es nur einen Stromanschluss.



Verbunden

Die Verbindung ist über WiFi und über eine integrierte SIM Karte gewährleistet.



Zuverlässig

Die Notbatterie stellt einen durchgehenden Betrieb sicher.



Aktuell

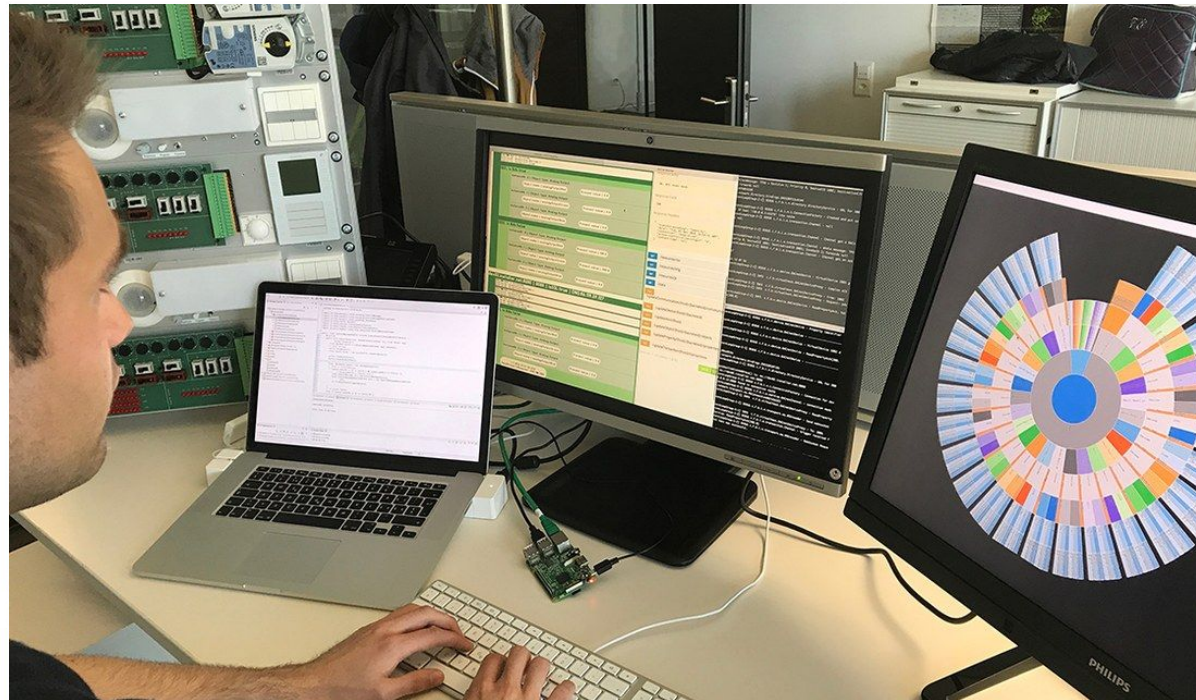
Neue Funktionen werden laufend entwickelt und über Updates hinzugefügt.

Gebäudeautomation \leftrightarrow IoT

n|w

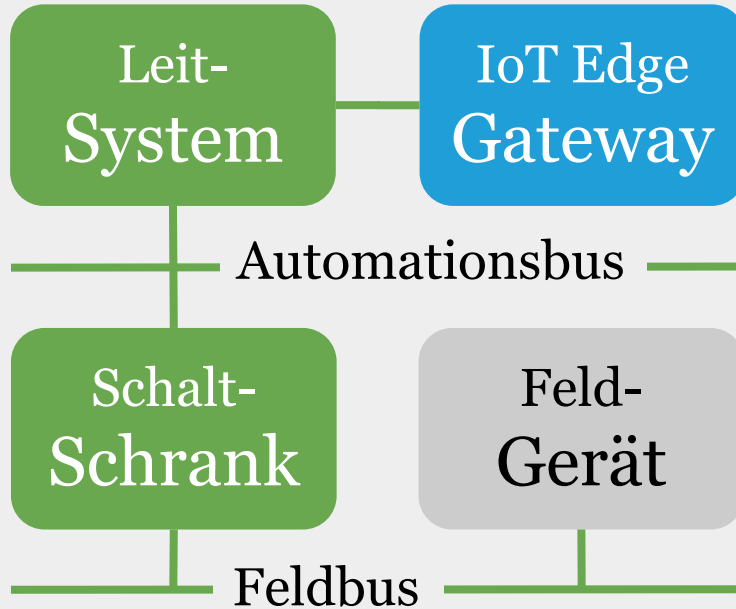
Konvergenz der Gebäudeautomation und IT-Welt

Gebäudeautomation in Zeiten des Internet der Dinge (IoT).



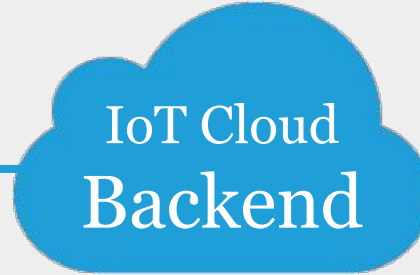
Gebäude

Lokales Netzwerk

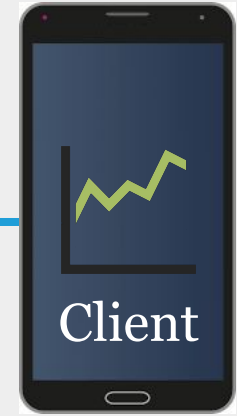


Internet

IP



IP



Zugriff je nach
Berechtigung
des Nutzers



Übersicht Bussysteme

Aufbau der Bussysteme

Ein Bus ist ein Kommunikationssystem, das eine Vielzahl von Geräten wie Messfühler (Sensoren), Stellglieder und Antriebe (Aktoren) mit einem Steuerungsgerät untereinander verbindet. Die Bussysteme für die Gebäudeautomation wurden ab den 1980er Jahren entwickelt, um die bis dahin übliche Parallelverdrahtung binärer Signale sowie die analoge Signalübertragung durch digitale Übertragungstechnik zu ersetzen.

Mit der zunehmenden Verbreitung der Netzwerktechnik und dem Einzug von Standard-Technologien des Internet ins Gebäude nähern sich die Bussysteme der Gebäudeautomation der neuen Kommunikationswelt an und lassen sich über IP-Netze übertragen.



Official Web Site of ASHRAE SSPC 135

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IT WORKING GROUP

Information Technology

Status

Since the design of BACnet began in 1987, much has changed in the world of computers, networking technology, and building automation systems. BACnet has been sufficiently flexible to handle many of these changes, but more changes are coming that may further challenge BACnet's architecture. Here are some of the changes that could affect the requirements for building automation systems:

1. The trend toward convergence of IT and building automation
2. Network security policies and standards
3. The increasing use of battery-powered and wireless networked devices
4. "Smart Grid" applications that involve building automation systems

The BACnet IT working group's primary task will be to enumerate the general communication requirements of building automation systems that will be deployed over the next several years and evaluate BACnet against those requirements. To the extent that BACnet does not meet those requirements, the working group will discuss, at a high level,



WHAT IS KNX?

BENEFITS

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SOFTWARE

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KNX and the Internet of Things

Internet of things is a buzzword in the world of information technology. Everyday objects become intelligent and communicate via the internet. This also means that the possibilities for home and building automation are increasing. A home or office where many different objects are connected with each other is no longer a dream but has become reality.

KNX takes a leading position in working with Internet of things and we offer different kinds of IoT solutions. Internet of things opens up new ways in the operation and visualization of KNX systems. We are creating the future of home and building control and Internet of Things will help us succeed.





Practical Security Recommendations
for building OPC UA Applications



OPC UA
The Industrial
Interoperability
Standard

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Unified Architecture

The OPC Unified Architecture (UA), released in 2008, is a platform independent service-oriented architecture that integrates all the functionality of the individual OPC Classic specifications into one extensible framework.

This multi-layered approach accomplishes the original design specification goals of:

- **Functional equivalence:** all COM OPC Classic specifications are mapped to UA
- **Platform independence:** from an embedded micro-controller to cloud-based infrastructure
- **Secure:** encryption, authentication, and auditing
- **Extensible:** ability to add new features without affecting existing applications
- **Comprehensive information modeling:** for defining complex information

[Functional Equivalence](#)



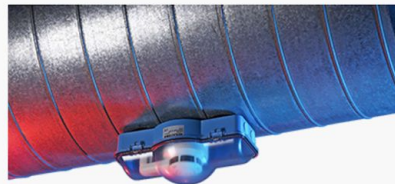
Smoke switch systems

LRS ventilation smoke switch system

With the LRS 01 and LRS 02, Securiton offers two systems for early smoke detection and the actuation of fire and smoke protection dampers.

The practical all-round

solution stands out by virtue of its well-thought-out details. The flow-optimised two-tube airflow system complements the reliable smoke switch technology inside a sturdy fibreglass-reinforced housing. The LRS therefore guarantees maximum detection reliability in ventilation ducts, combined with unique advantages during mounting and maintenance.



Fire door control

Every fire begins with the unnoticed formation of smoke and the silent spread of toxic gases that are lethal to humans. Within an extremely short time, emergency exit

and rescue routes are filled with smoke and can no longer be used. With a fire door control, open doors and gates are closed automatically in the event of a fire and the smoke is prevented from spreading. Emergency exit and rescue routes are kept free of smoke for evacuation and damages are limited to the affected fire sector.



LoRa WAN demo project by



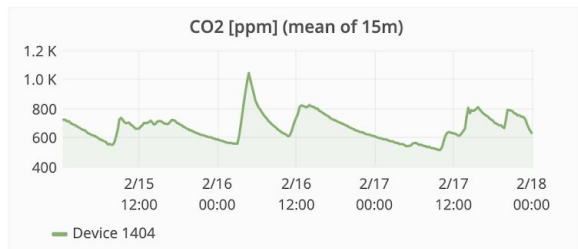
[CO2, temperature, and humidity sensor](#)



Node **1404** (CO2)



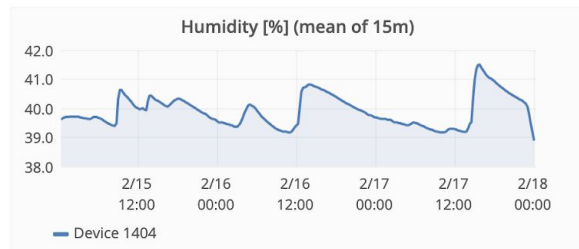
LoRa infrastructure provided by



Current

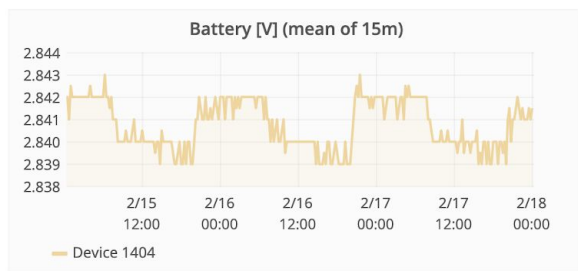
625.5

ppm



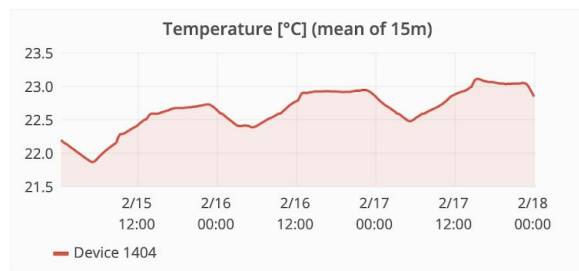
Current

38.9 %



Current

2.84 V

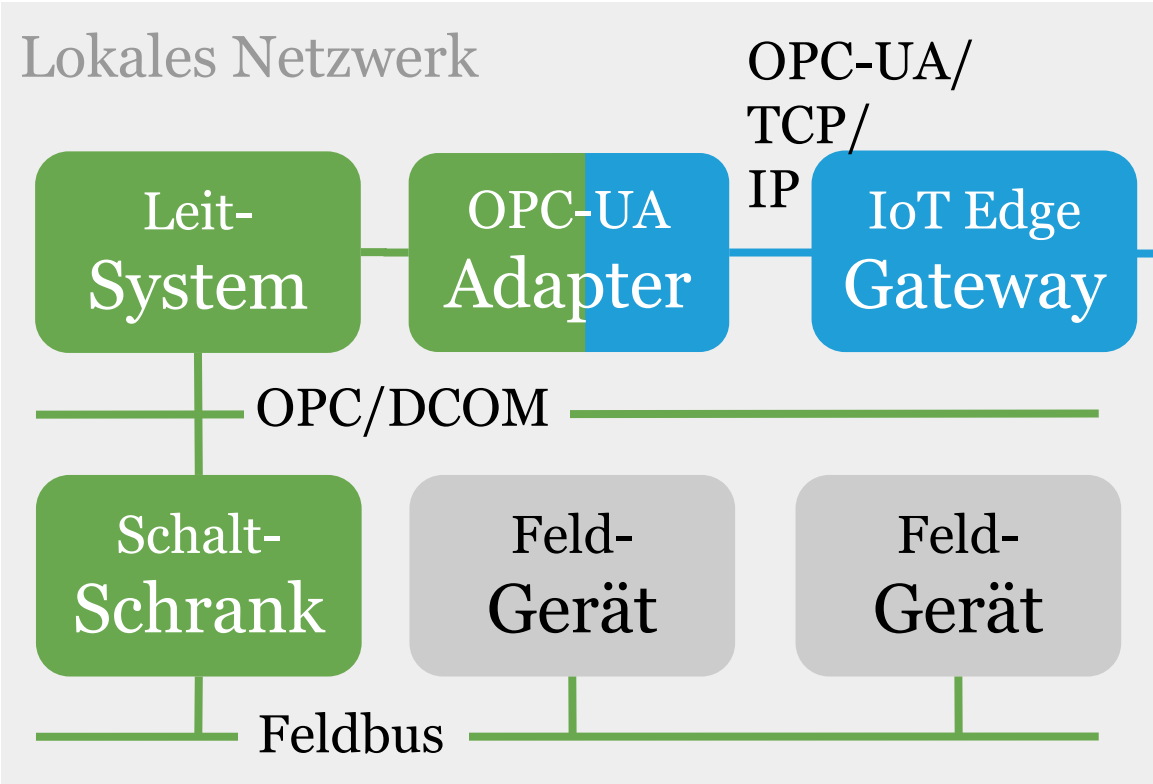


Current

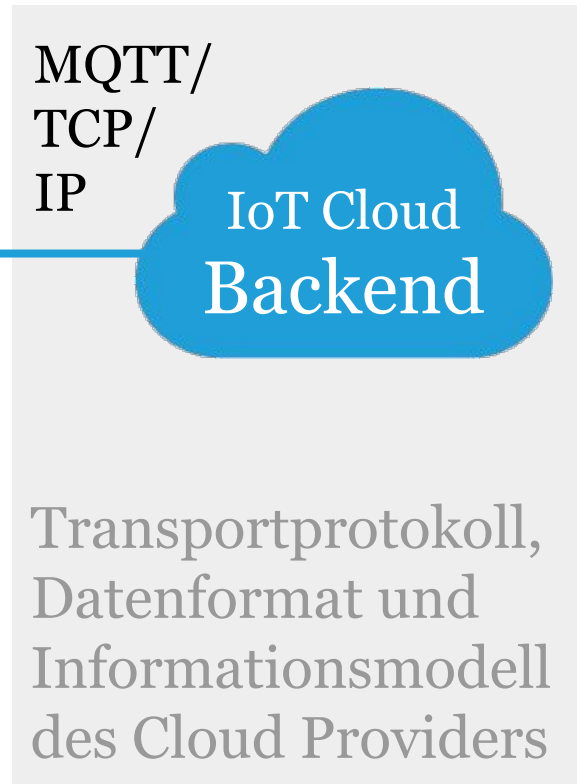
22.84 °C

Edge \leftrightarrow Cloud

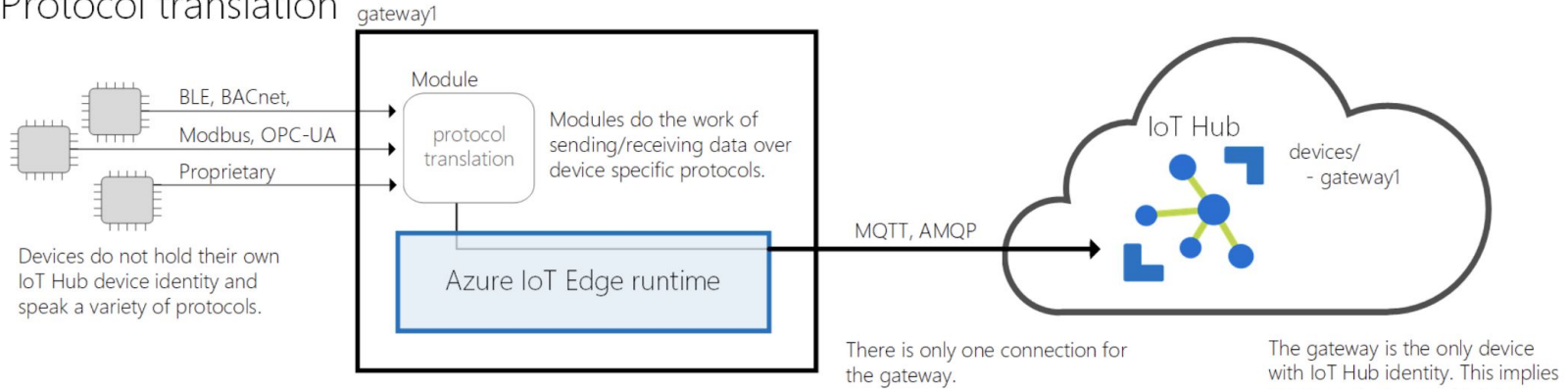
Gebäude



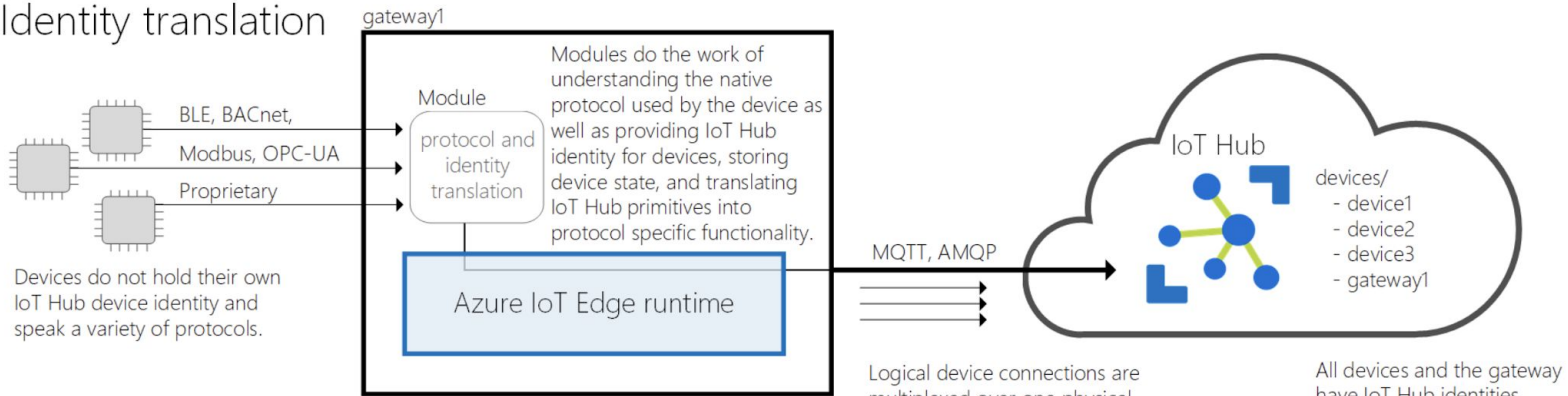
Internet



Protocol translation



Identity translation



Azure / **iot-edge-opc-publisher**

Watch

46

★ Unstar

131

Fork

84

<> Code

Pull requests 0

Actions

Security

Insights

Azure Industrial IoT - OPC Publisher

378 commits

4 branches

18 releases

13 contributors

Branch: forward

Create new file

Upload files

Find file

Clone or download

README.md

Update readme

3 months ago

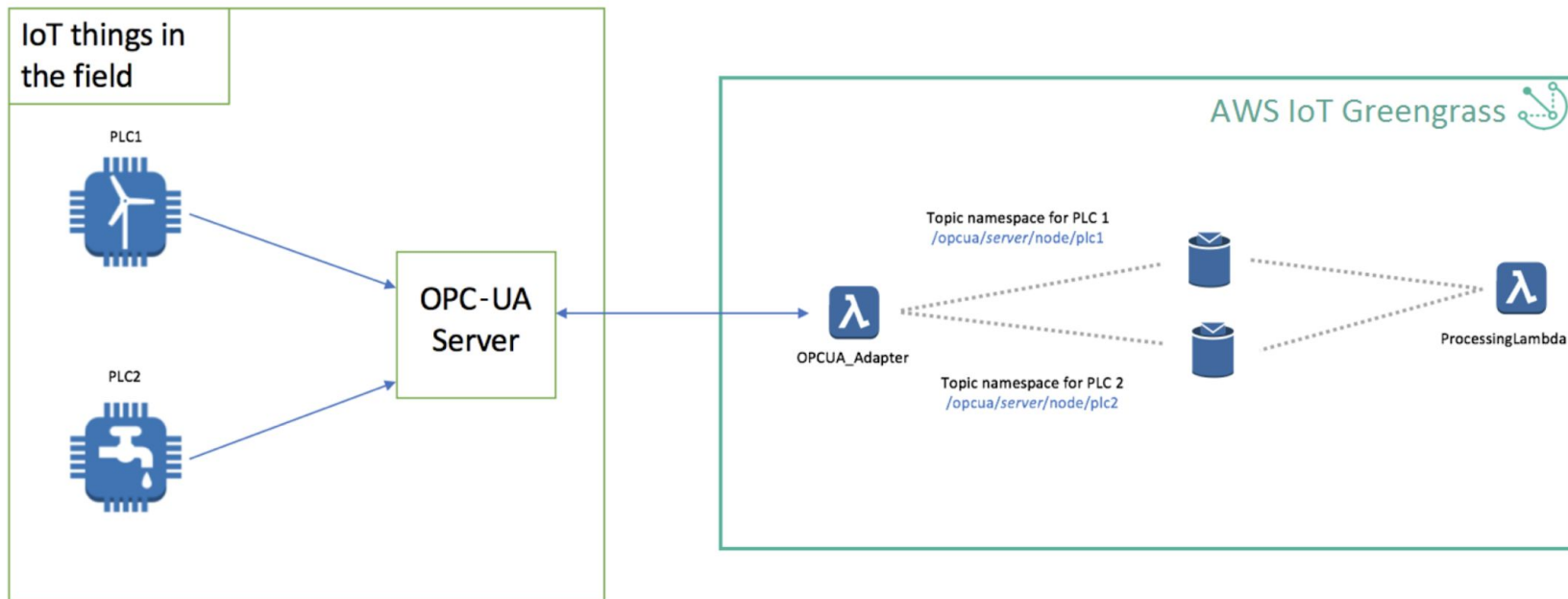
README.md

OPC Publisher

The OPC publisher, including source code history, Issues and Code moved to the [Azure/Industrial-IoT](#) repo.

This repo contains all releases up to [version 2.4.1](#) but is no longer maintained.

The example implementation uses a Node.js Lambda function that acts as an OPC-UA proxy on a Greengrass core. This is possible because Lambda functions running on a core can access network resources. In the following diagram, the `OPCUA_Adapter` Lambda function transfers information sent from an OPC-UA server over TCP to other functions or services in the Greengrass group.



IoT Edge runtime

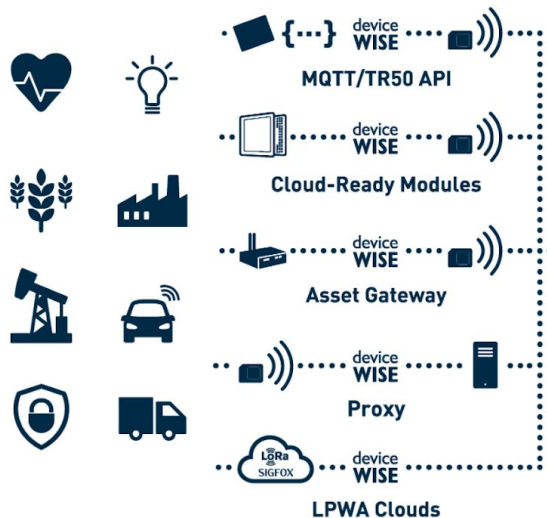
The Azure IoT Edge runtime enables custom and cloud logic on IoT Edge devices. The runtime sits on the IoT Edge device, and performs management and communication operations. The runtime performs several functions:

- Installs and update workloads on the device.
- Maintains Azure IoT Edge security standards on the device.
- Ensures that IoT Edge modules are always running.
- Reports module health to the cloud for remote monitoring.
- Manages communication between downstream leaf devices and an IoT Edge device, between modules on an IoT Edge device, and between an IoT Edge device and the cloud.

IoT Plattformen

deviceWISE IoT Platform

CONNECT



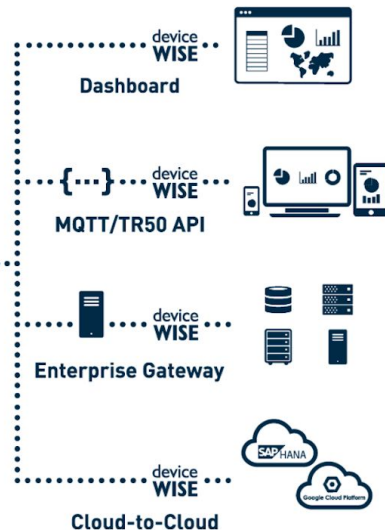
MANAGE



Connectivity Management



INTEGRATE



PREDIX Developer Network

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OPERATIONS

Predix CI DEPRECATED

Predix CI is a continuous integration and delivery service integrated with the Predix platform.

PREDIX

Business Operations

Accelerate multi-channel rollouts and easily manage numerous business models to grow revenue and maximize profits.

PREDIX

Predix Logging

Aggregate, view, and analyze your Cloud Foundry applications log files.

PREDIX

Machine Data Analytics SOON

Simplify collection and analysis of big data from infrastructure, security systems, and business applications.

splunk>

ANALYTICS SERVICES

SAS Event Stream Processing BETA

Analyze continuously flowing data over long periods of time where low-latency incremental results are important.

sas

Anomaly Detection BETA

Use this standalone analytic service to identify threats and anomalous events in critical infrastructure and operations.

THETARAY
CLEAR. CONFIDENT. ACTION.

Dynamic Time Warping BETA

Perform advanced time-series analysis and find the optimal alignment between two time series of different lengths.

TOP data science

Analytics Framework

Deploy, orchestrate, and schedule analytics for execution in Predix.

PREDIX

SECURITY

Web Application Security BETA

Find and fix vulnerabilities in your application before they become a problem, with easy-to-

Key Management Service BETA

Securely create, control, manage, audit, and visualize cryptographic keys used to encrypt

Credential Store and Encryption Vault BETA

Securely store and manage access to tokens, passwords, API keys, and other credentials.

Predix-DCS SOON

Predix-DCS issues a certificate to the device or application, allowing customers to

AWS IoT Platform - Amazon Web Services



AWS IoT

Easily and securely connect devices to the cloud.

Reliably scale to billions of devices and trillions of messages.

Get started with AWS IoT

Azure IoT Hub | Microsoft Azure

Microsoft Azure

IoT Hub

Connect, monitor, and manage billions of IoT assets


- ✓ Get started quickly
- ✓ Connect and manage billions of IoT devices and assets
- ✓ Support a broad set of operating systems and protocols
- ✓ Establish reliable, bi-directional communication
- ✓ Enhance the security of your IoT solutions
- ✓ Ingest real-time data and upload files to the cloud

Get started with IoT Hub


Explore IoT Hub:

- [Pricing details](#)
- [Documentation](#)

IBM Watson IoT - IoT Platform



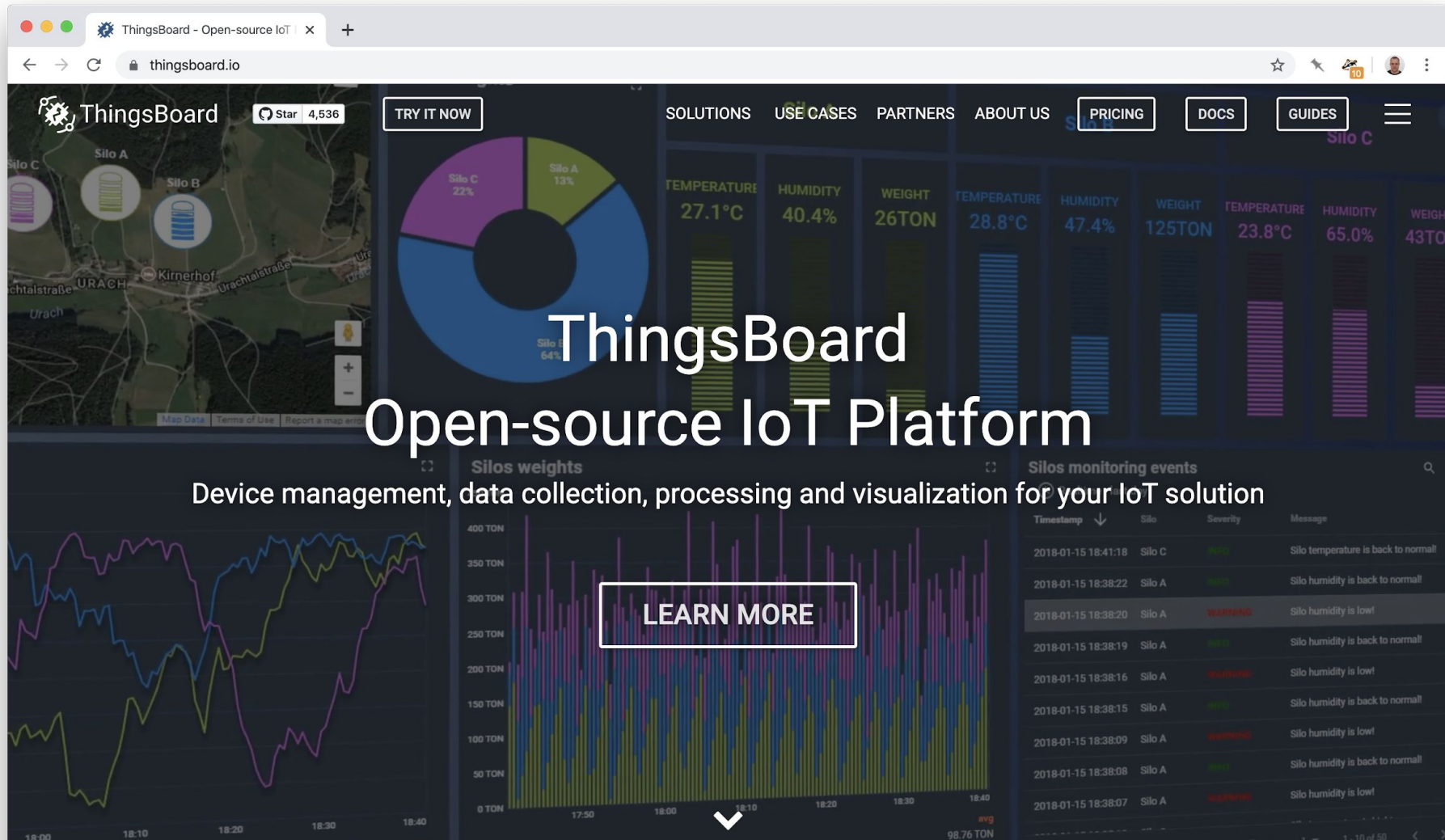
Watson Internet of Things



Make sense of data to optimize operations, manage assets, rethink products and services, and transform the customer experience.

Make the Watson IoT Platform the hub of your IoT projects. Deploy a cloud-hosted framework on IBM Bluemix.

Try Watson IoT Platform





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CLOUD PLATFORM
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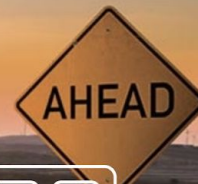
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INSTANT ACCESS

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FUTURE READINESS
OVER-THE-AIR (OTA) UPDATES

[LEARN MORE](#)

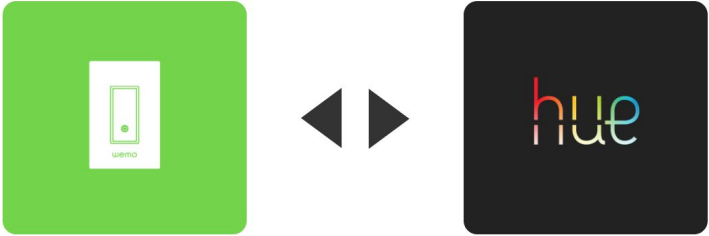


Interoperabilität


Connect WeMo Light Switch to x Thomas

Secure https://ifttt.com/connect/wemo_light_switch/hue


IFTTT



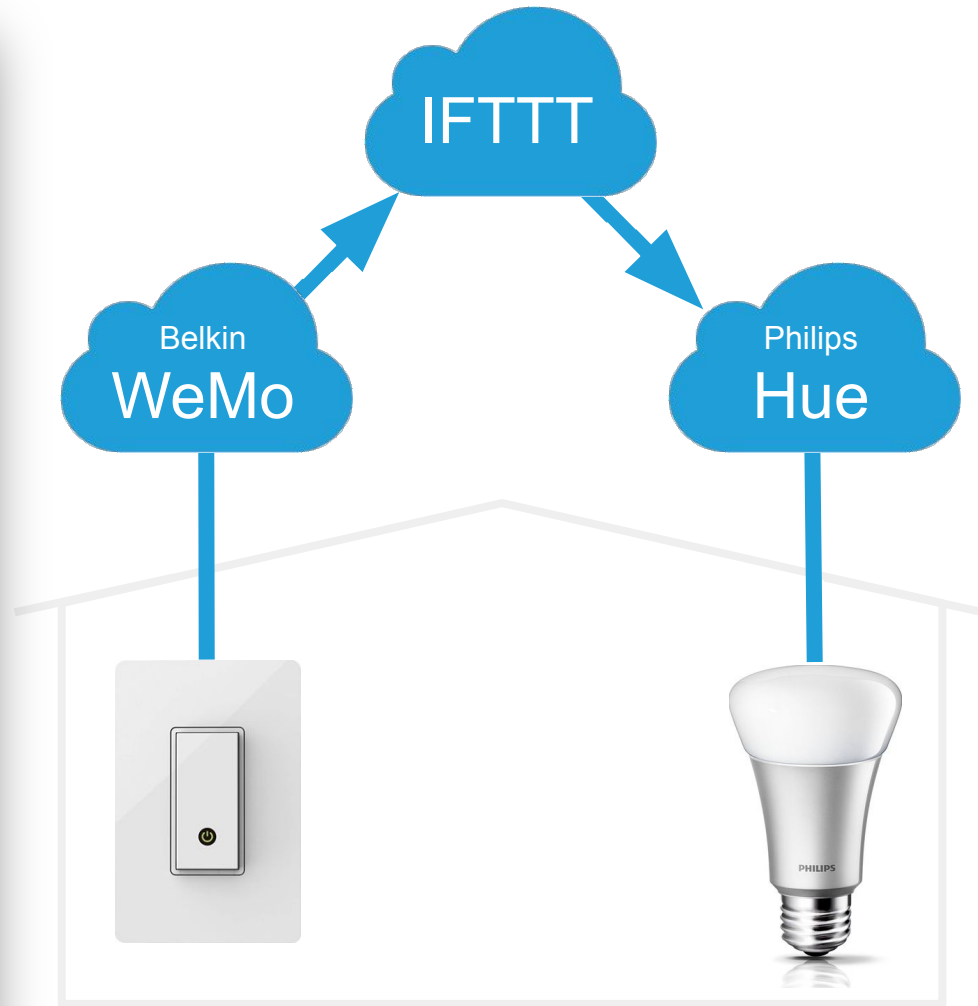
Connect WeMo Light Switch to Philips Hue



Change the lights to a random color when I long-press the light switch



Scene: Long press on WeMo switch sets Hue lamp to a warm white color



cloudevents / spec

Watch 120 Unstar 1.4k Fork 167

Code Issues 14 Pull requests 0 Actions Projects 0 Security Insights

378 lines (278 sloc) 15.1 KB

Raw Blame History

HTTP 1.1 Web Hooks for Event Delivery - Version 1.0

Abstract

"Webhooks" are a popular pattern to deliver notifications between applications and via HTTP endpoints. In spite of pattern usage being widespread, there is no formal definition for Web Hooks. This specification aims to provide such a definition for use with [CNCF CloudEvents](#), but is considered generally usable beyond the scope of CloudEvents.

Status of this document

This document is a working draft



[News](#) [Docs](#) [Wiki](#) [Software](#) [Community](#) [FAQ](#)

MQTT is a machine-to-machine (M2M)/"Internet of Things" connectivity protocol. It was designed as an extremely lightweight publish/subscribe messaging transport. It is useful for connections with remote locations where a small code footprint is required and/or network bandwidth is at a premium. For example, it has been used in sensors communicating to a broker via satellite link, over occasional dial-up connections with healthcare providers, and in a range of home automation and small device scenarios. It is also ideal for mobile applications because of its small size, low power usage, minimised data packets, and efficient distribution of information to one or many receivers ([more...](#))

News 📰

MQTT v5.0 now an official OASIS standard

April 3rd, 2019 - [No Comments](#)

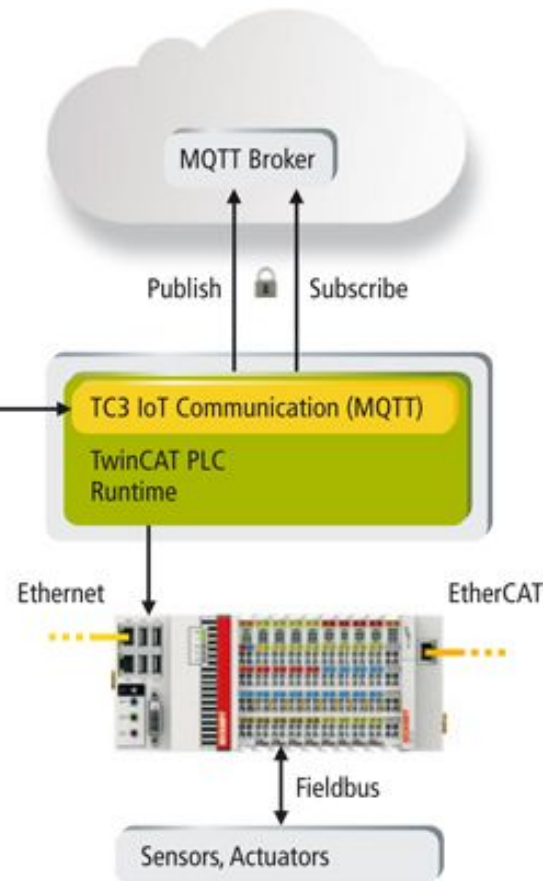
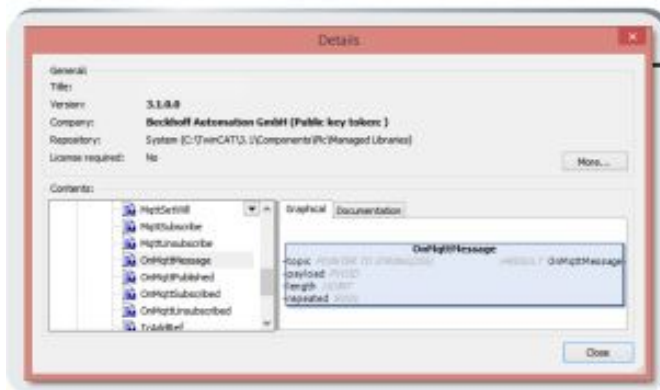
BECKHOFF

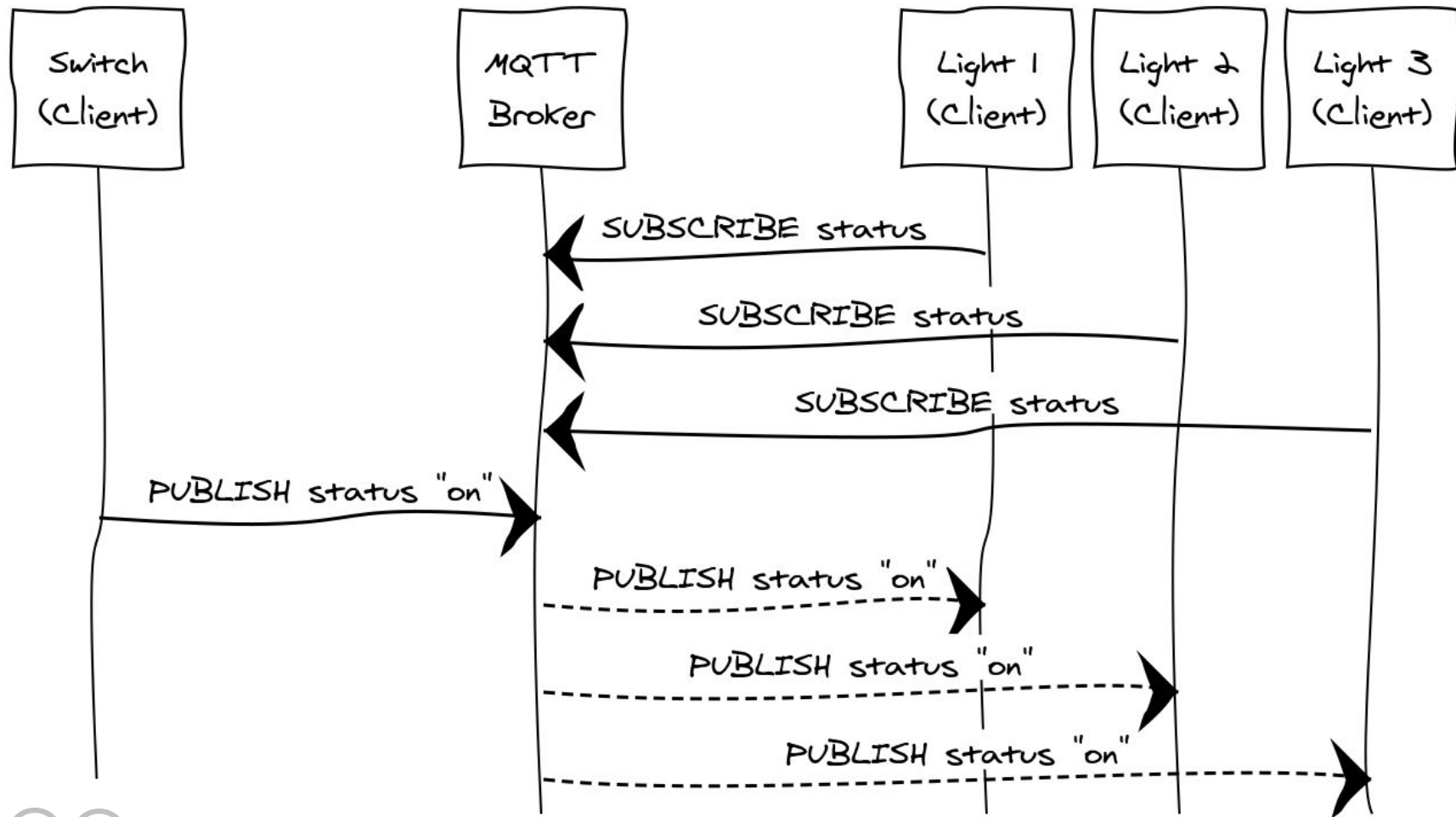


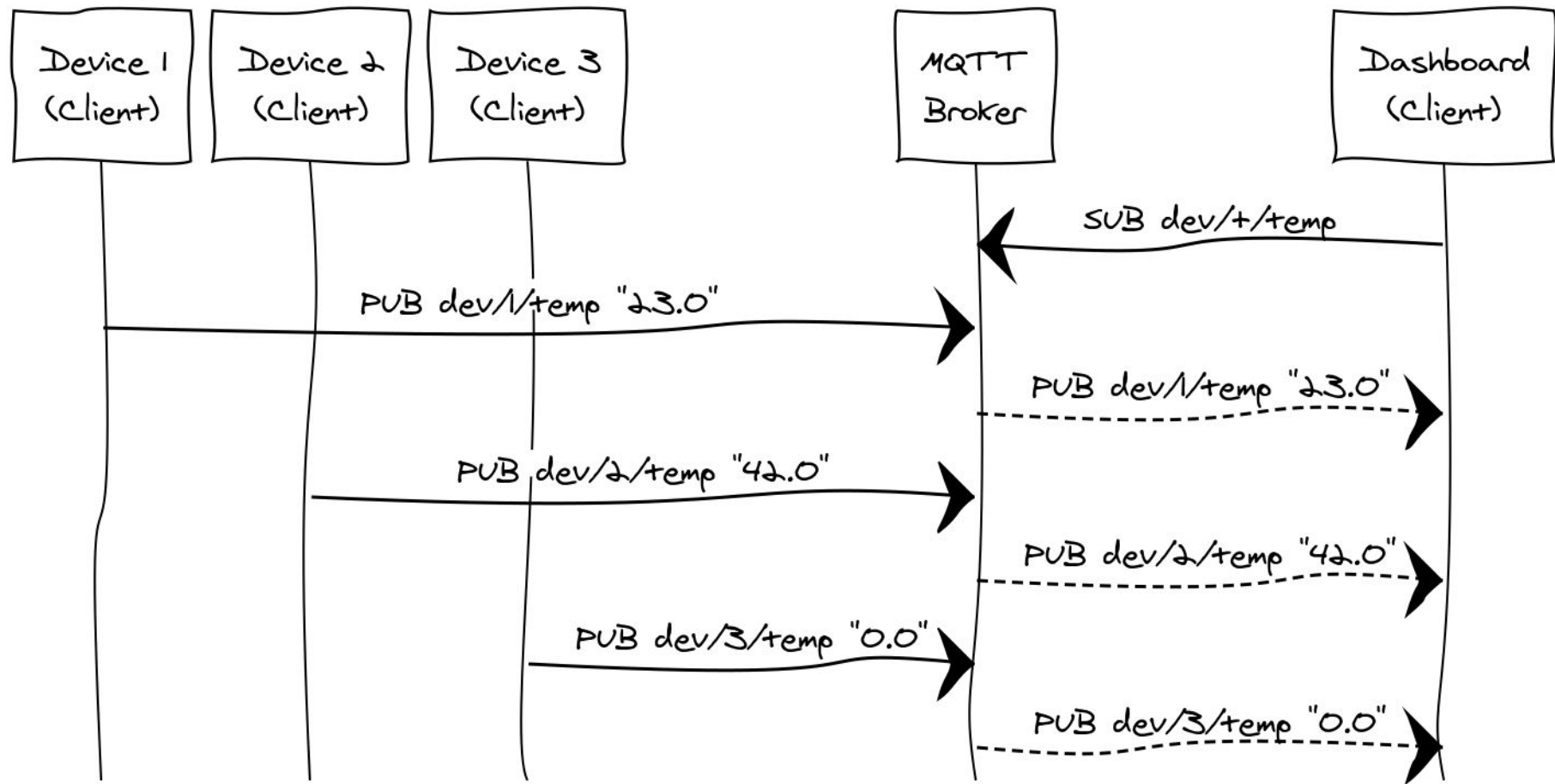
- + TF6421 | TC3 XML Server
- + TF6500 | TC3 IEC 60870-5-10x
- + TF6510 | TC3 IEC 61850/IEC 61400-25
- + TF6600 | TC3 RFID Reader Communication
- + TF6610 | TC3 S5/S7 Communication
- + TF6650 | TC3 DBC File Import for CAN
- **TF6701 | TC3 IoT Communication (MQTT)**

- Print version (PDF)
- Film: Product presentation
- Animation
- Documentation (PDF)

- + TF6710 | TC3 IoT Functions
- + TF6720 | TC3 IoT Data Agent
- + TF6730 | TC3 IoT Communicator
- + TF6735 | TC3 IoT Communicator App
- + TF6760 | TC3 IoT HTTPS/REST
- TF7xxx | TC3 Vision
- TF8xxx | TC3 Industry specific







vernemq / vernemq

Watch

100

★ Unstar

1.9k

Fork

206

Code

Issues 55

Pull requests 6

Actions

Projects 0

Wiki

Security

Insights

132 lines (100 sloc) 4.43 KB

Raw

Blame

History

VerneMQ: A Distributed MQTT Broker

build passing docker pulls 6.4M slack 532



VerneMQ is a high-performance, distributed MQTT message broker. It scales horizontally and vertically on commodity hardware to support a high number of concurrent publishers and consumers while maintaining low latency and fault tolerance. VerneMQ is the reliable message hub for your IoT platform or smart products.

VerneMQ is an Apache2 licensed distributed [MQTT](#) broker, developed in [Erlang](#).

Smart Home



Offers

Products ▾

Rooms ▾

Ideas & Inspiration

New at IKEA



Smart lighting

40 Results

Price ▾

Color ▾

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Sort by ▾



New

TRÅDFRI

LED bulb E26 250 lumen

\$9.99

★★★★★ 5.0 (1)



New

TRÅDFRI

LED bulb GU10 400 lumen

\$8.99



New

TRÅDFRI

LED bulb E26 806 lumen

\$12.99



New

TRÅDFRI

Dimmer kit, E26

\$12.99

★★★★☆ 4.0 (1)

Checkliste für den Umzug

Haben Sie beim Zügeln an alles gedacht? Ans An- und Abmelden bei der Wohngemeinde? An die Adressänderung bei der Post? Unsere Checkliste „Umzug“ hilft Ihnen, nichts zu vergessen – vor, während und nach den stressigen Umzugstagen.



Vor dem Umzug

- Schliessen Sie einen neuen Mietvertrag (oder einen Kaufvertrag) ab und kündigen Sie den alten fristgerecht, am besten mit einem eingeschriebenen Brief.
- Geben Sie bei Ihrem Arbeitgeber einen freien Tag ein. Sie haben in der Regel Anrecht auf einen Umzugstag. Bei langen Distanzen erhalten Sie u.U. länger frei.
- Melden Sie sich rechtzeitig bei Ihrer alten Wohngemeinde ab – informieren Sie sich vorgängig bei der Einwohnerkontrolle, ob Sie evtl. persönlich vorsprechen müssen.
- Wenn Sie einen Hund besitzen, müssen Sie auch diesen bei Ihrer alten Wohngemeinde abmelden.
- Informieren Sie Ihren zuständigen Sektionschef (Militär), die zuständige Zivildienststelle (Zivildienst) oder die zuständige Zivilschutzstelle (Zivilschutz) der

Moving your smart home: What you should (and shouldn't) do



Alex Sheehan

Jul 23, 2019

Remember when [smart homes](#) were creepy, futuristic dreams? Now it seems like everyone has some sort of connected device running their household.

But when it comes time to move, it's not as easy as throwing it all into a box. You have a lot more prep to think about than that. And not all of your home automation devices come with you (sorry!). Here are some smart home ideas and tips for your upcoming move.

Think about what to take and what to leave behind

Disconnecting

Use your list to go through and back up any data or files you have stored on each device. Remove loose media (memory cards, for example) and put that aside.

For devices moving with you

- Detach cables, wires, accessories and any other “add-ons” so you can pack those separately — you don’t want a wire port to be destroyed in transit
- Disconnect from power source
- Remove batteries to avoid corrosion

For devices staying behind

- Disable your administrative access — schedule it for your move-out date
- Log out of all your user accounts
- Reset devices to factory settings

I'm moving and leaving my tado° devices behind. What should I do to make sure that the new owners can use them?

You can only transfer ownership of a tado° device if you own it and it is not rented.

If you own your tado° devices, here's what you need to do to ensure that the new owners can use your devices:

1. [Invite them to join](#) your tado° Home.
2. Once they have accepted your invitation, they can update their contact details by going to **Settings > Home > Home details**.
3. Next, you either need to remove yourself or ask them to remove you from the tado° Home by [following these steps](#).

V-ZUG-HOME NETWORKABLE WASHROOM DEVICES



V-ZUG networkable washing machines

Effective, hygienically clean, but also resource-saving – V-ZUG washing machines are of top-class quality. But that's not all. Thanks to a LAN connection, the washing machine sends a message to your smartphone as soon as the washing cycle has finished.

[V-ZUG-Home washing machines - more information!](#)



V-ZUG networkable tumble dryer

V-ZUG tumble dryers help you to do your housework in no time. There's no longer any need to trek to the laundry room to see whether the programme has finished – the networked tumble dryer will even let you know when the fluff filter needs cleaning, for example.

[V-ZUG-Home tumble dryer - more information!](#)

Smart Neighbourhood?



All Products

Protect Plans

Help

Log In

EN ▾

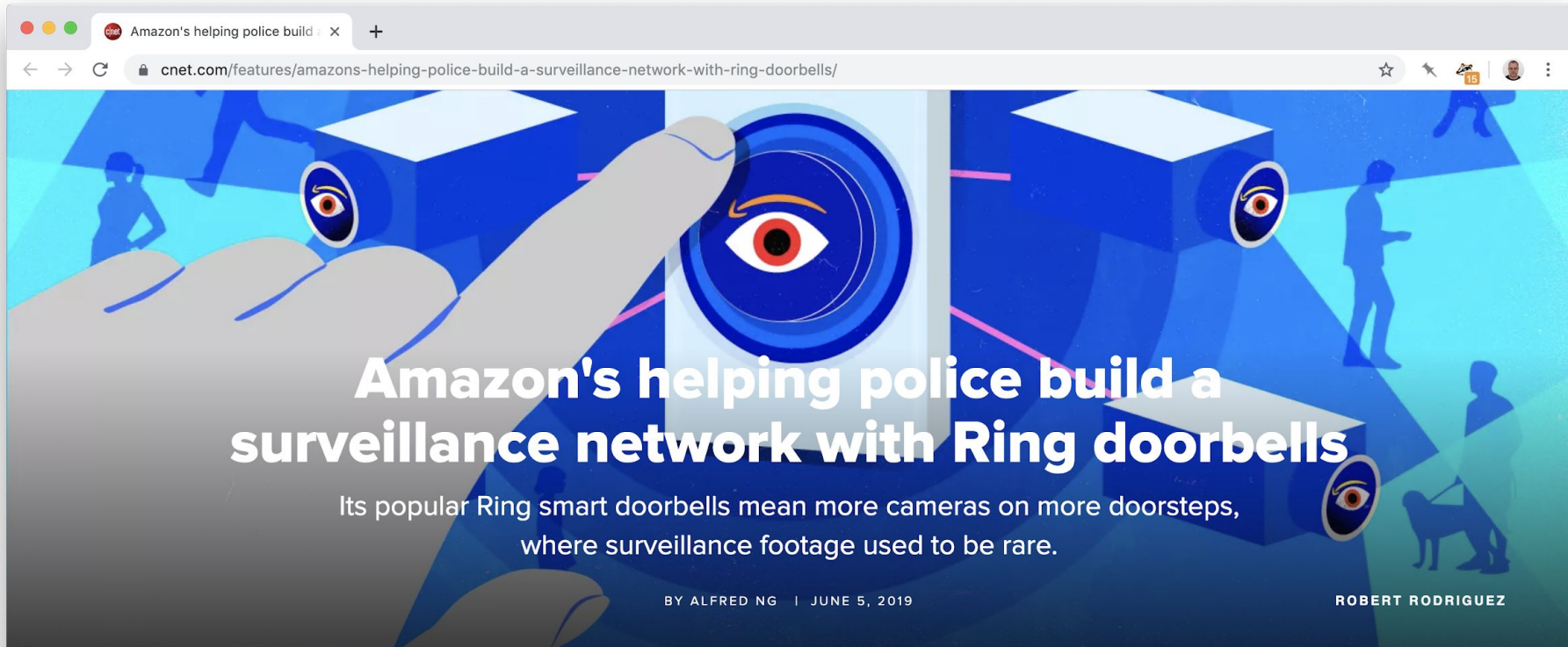
Cart (0)

New

Goes everywhere.
Sees everything.
Introducing the new Stick Up Cams.

Shop Now





If you're walking in Bloomfield, New Jersey, there's a good chance you're being recorded. But it's not a corporate office or warehouse security camera capturing the footage -- it's likely a Ring doorbell made by Amazon.

While residential neighborhoods aren't usually lined with security cameras, the smart doorbell's popularity has essentially created private surveillance networks powered by Amazon and promoted by police departments.



EFF
@EFF



The unregulated surveillance partnership between Amazon's Ring and local police is a threat to our privacy, and so is the misleading panic it creates.



Amazon's Ring Is a Perfect Storm of Privacy Threats

Doors across the United States are now fitted with Amazon's Ring, a combination doorbell-security camera that records and transmits video straight to users' ...

eff.org

Search Twitter

Relevant people



EFF
@EFF

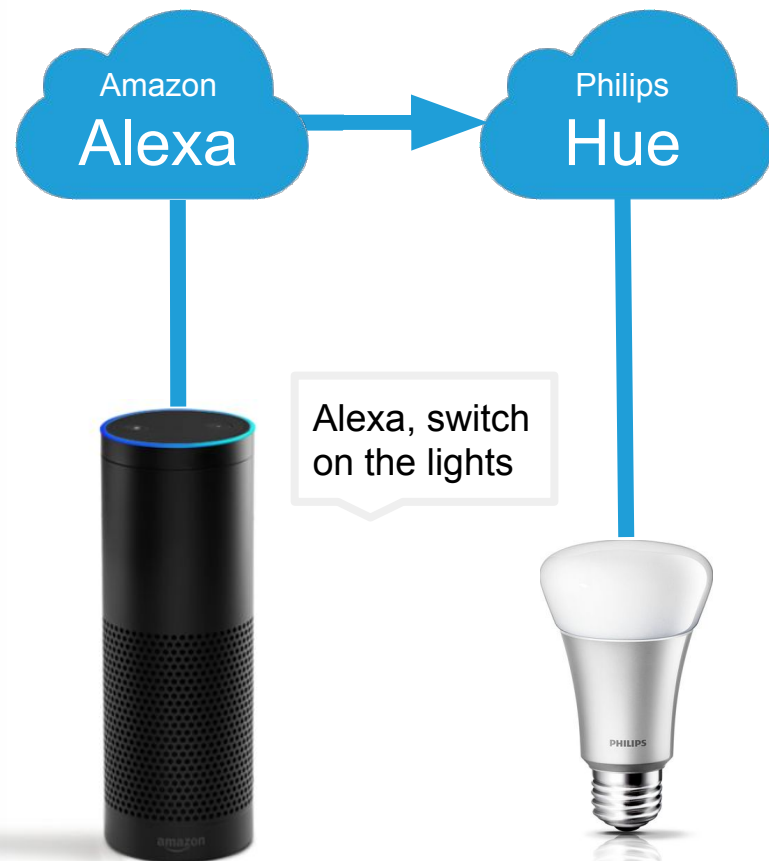
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Sprachsteuerung




amazon alexa

Create Amazon Business Account [Contact Us](#)

Alexa for Hospitality

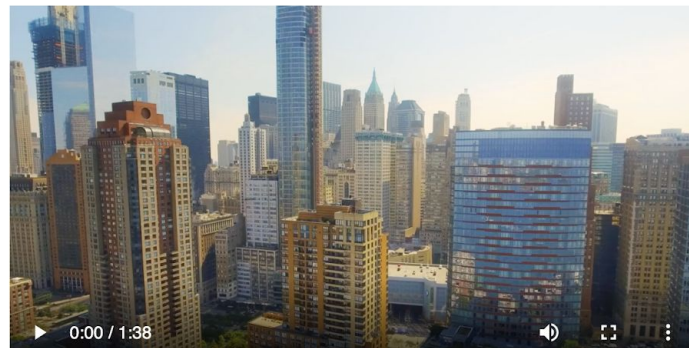
Memorable Experiences. Better Service. Just Ask.

[Sign in with Amazon Business](#)



Your guests want hospitality experiences that are personalized, and memorable. Alexa for Hospitality helps you deliver those immersive experiences, so you can delight your guests, and improve your teams' productivity.

Alexa for Hospitality integrates seamlessly with your existing amenities and services, to become your guests' virtual concierge. Alexa simplifies tasks for guests like playing music, ordering towels, controlling in-room temperature or lighting, finding local restaurants and attractions, calling, and even checking out. Alexa makes delivering a great customer experience simple. Just ask.





Use Cases

Alexa in Meeting Rooms

Meeting rooms are common offenders for lost productivity. From finding an available room for your ad hoc meeting, interacting with the meeting room technology, or finding real time help when it all goes wrong, the experience can be frustrating and time consuming. Alexa for Business simplifies your meeting room experiences and let's you interact with your meeting rooms in the easiest and most natural way - by just using your voice. Alexa for Business works with your existing conferencing equipment and meeting solutions. Starting a meeting is as simple as saying *"Alexa, join my meeting"* and Alexa finds the upcoming meeting on the calendar, turns on the display, and connects you to the meeting. When you need a room for your ad hoc meeting or extend your booking, you can just say *"Alexa, book this room for 30 minutes"* or *"Alexa, extend my meeting by 15 minutes"*. [Learn more](#)



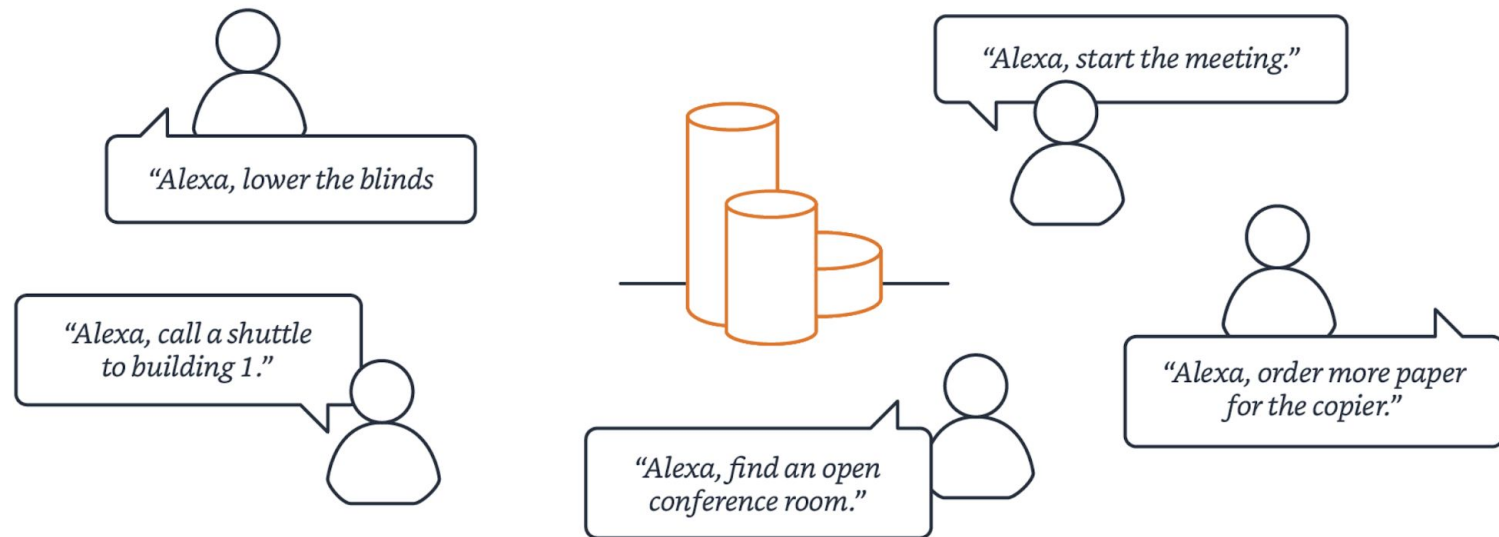
Alexa for Employees

With Alexa for Business, you can invite your employees to be part of your Alexa for Business organization. Once enrolled, employees can use the Alexa enabled devices they



Shared devices

Shared devices can be accessed by anyone, and they are not associated with personal Alexa accounts. You can specify the skills that can be used on each device. Alexa for Business administrators can never see the utterances of an enrolled user or a shared device. To learn more, see [Alexa for Business FAQs](#).



Alexa Privacy

Privacy Settings

Common Questions

Alexa and Echo devices
are designed to protect
your privacy



Wake word



Indicators



Microphone controls



Camera controls



Manage voice
recordings

Technology

Amazon Workers Are Listening to What You Tell Alexa

A global team reviews audio clips in an effort to help the voice-activated assistant respond to commands.

By [Matt Day](#), [Giles Turner](#), and [Natalia Drozdiak](#)

11 April 2019, 00:34 CEST



Privatsphäre

Introducing Echo Look - Hands-free camera and style assistant

With Echo Look, you can take full-length photos of your daily look using just your voice. The built-in LED lighting and depth-sensing camera let you blur the background to make your outfits pop, giving you clean, shareable photos. Get a live view in the Echo Look app or ask Alexa to take a short video so you can see yourself from every angle. View recommendations based on your daily look and use Style Check for a second opinion on what looks best. And, because Alexa is built in the cloud, she's always getting smarter—and so will Echo Look.

"Alexa, take a picture."

"Alexa, take a video."

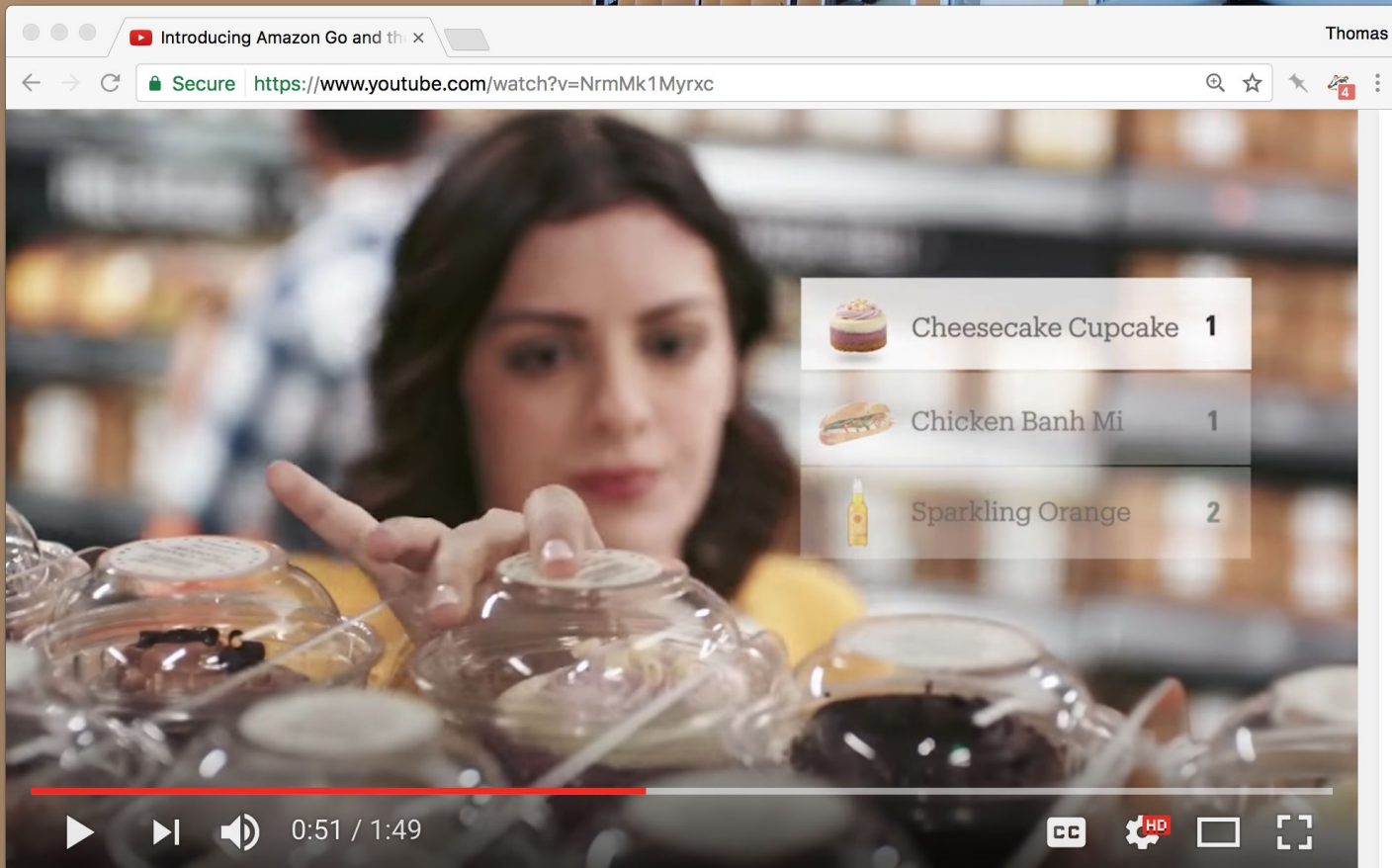
Zeynep Tufekci on Twitter: "With this data, Amazon won't be able to just sell you clothes or judge you. It could analyze if you're depressed or pregnant and much else."



Use Face ID on your iPhone or iPad Pro

Face ID lets you securely unlock your iPhone or iPad, authenticate purchases, sign in to apps, and more — all with just a glance.





Introducing Amazon Go and the world's most advanced shopping technology



SounderBruce, CC BY-SA 4.0

XOVIS

SOLUTIONS CASE STUDIES PRODUCTS TECHNOLOGY XOVIS INSIGHTS ABOUT JOBS CUSTOMER PORTAL

ABOUT XOVIS

AIRPORT SOLUTIONS

RETAIL SOLUTIONS

SWITZERLAND +

BOSTON

HOW TO WORK WITH US



AI / Deep Learning

01.10.2018

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Artificial Intelligence (AI) algorithms further improve the counting accuracy for advanced applications such as in-store analytics.

AI algorithms take the Xovis 3D Sensors' counting accuracy even closer to perfection. *"Based on the powerful Xilinx Zynq processing platform, we were able to integrate a Deep Net with a classification accuracy of more than 99.5% on the edge device. Compared with the technologies available today, this process significantly enhances people detection,"* comments Xovis co-founder and CTO Markus Herli.

Moreover, AI-powered Xovis 3D Sensors open up future applications for footfall counting, people flow monitoring and in-store analytics. The retail industry, in particular, will benefit from new possibilities such as returning customer detection, full-path customer analytics and the installation of cashier-free payment systems. At airports, anonymous passenger tracking over long distances will lead to new insights and to a seamless travel experience.

What is AI and Deep Learning?

Artificial intelligence is an algorithmic system that mimics the human brain and its reaction to

Case Studies

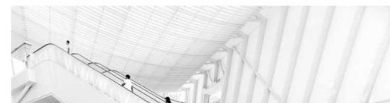


Large area tracking to boost sales

AI-powered Xovis 3D Sensors and Amoobi's in-store analytics solution provide profound insights into shopper behavior.



Solutions



Facial recognition

Facial recognition technology scrapped at King's Cross site

Surveillance software switched off at prestigious development after backlash





Cory Doctorow: why personal

Thomas

← → ↺

Secure <https://www.theguardian.com/technology/2008/jan/15/data.security>

🔍 ☆ ⚡ 10 ⋮

Personal data is as hot as nuclear waste

Cory Doctorow

We should treat personal electronic data with the same care and respect as weapons-grade plutonium - it is dangerous, long-lasting and once it has leaked there's no getting it back

CC

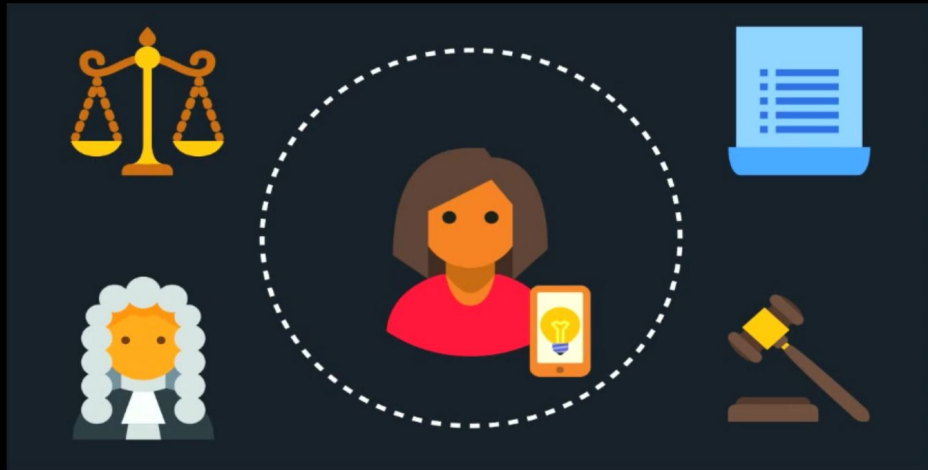
⚙️ HD

⛶

Wem gehören die Daten?



Aral Balkan
The Matrix, Inverted



The Matrix, Inverted

from Øredev Conference **PRO** 5 days ago | more



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The Matrix, Inverted



CITIZEN OWNED

Copies of personal data are stored in citizen-owned and citizen-controlled MIDATA cooperatives. Members profit from data analysis, visualization and interpretation tools. In this way, members will increasingly be able to take control over their own health.



NOT FOR PROFIT

In the same way that blood banks and citizen science platforms work best when no financial incentives are offered, MIDATA cooperatives are not-for-profit. Revenues will be reinvested into services on the platform and into research projects for the benefit of society.



OPEN SOURCE

MIDATA cooperatives offer an innovation platform (APIs) for third parties by providing a secure sandbox in which to develop data analytics and visualization services on members' data without having to establish their own data storage environment.



TRANSPARENT

Transparency is ensured by the fact that the governance principles of MIDATA cooperatives are public. Members are informed and can participate in decision making processes. They can also withdraw their personal data at anytime.



SECURE

Data are multiply encrypted and only the members possess the key to their data. Every data access is logged. Secure citizen-controlled data access across different national cooperatives will be established to permit global research projects and clinical trials.



REGIONAL

The MIDATA model enables the construction of regional/national cooperatives which, by a set of common rules, permit global research projects to be set up and carried out in a fair and democratic manner.



DIGITAL TWIN CMU

Hochschule für Architektur, Bau und Geomatik: Project Initiative Digital Twin Campus Murtens - Innovation Platform for Teaching and Research (DigitalTwinCMU)

Moderne Gebäude werden heute fast ausschliesslich mit digitalen Methoden erstellt (Virtual Design and Construction VDC, auch bekannt als Building Information Modelling BIM).

Ziel ist daher die Erstellung eines BIM-Modells mit Integration von Sensordaten für den Campus Murtens als Grundlage für die Lehre und Forschungsprojekte (Erstellen eines Digital Twins).

DSGVO \leftrightarrow IoT

DSGVO

Kapitel 1 (Art. 1 – 4) ▾

Allgemeine Bestimmungen

Kapitel 2 (Art. 5 – 11) ▾

Grundsätze

Kapitel 3 (Art. 12 – 23) ▾

Rechte der betroffenen Person

Art. 12 – Transparente Information, Kommunikation und Modalitäten für die Ausübung der Rechte der betroffenen Person

Art. 13 – Informationspflicht bei Erhebung von personenbezogenen Daten bei der betroffenen Person

Art. 14 – Informationspflicht, wenn die personenbezogenen Daten nicht bei der betroffenen Person erhoben wurden

Kapitel 3 Rechte der betroffenen Person

Abschnitt 1 – Transparenz und Modalitäten

Artikel 12 – Transparente Information, Kommunikation und Modalitäten für die Ausübung der Rechte der betroffenen Person

Abschnitt 2 – Informationspflicht und Recht auf Auskunft zu personenbezogenen Daten

Artikel 13 – Informationspflicht bei Erhebung von personenbezogenen Daten bei der betroffenen Person

Artikel 14 – Informationspflicht, wenn die personenbezogenen Daten nicht bei der betroffenen Person erhoben wurden



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Consumer Rights Protection and Biometric Recognition Technology: An Unattainable Balance?

Posted: 17 Apr 2018

[Marta Santos Silva](#)

Maastricht University, Faculty of Law, Private Law Department

Date Written: April 1, 2018

Abstract

Biometric technology is part of our everyday connected lives. Wi-Fi tracking and radio waves, predicting analytics and deep learning allow its use for recognizing faces, voices, movements, personality and character. Governments and private companies have been applying biometric recognition technology in the sectors of fitness, healthcare, transportation, entertainment and security. More recently, the retail marketing industry has been resorting to it to monitor and control consumer engagement levels in real time thereby generating new sources of income. Biometric technology is unobtrusive, and it can be used to provide more impressive, tailor-made experiences to consumers. However, the intrusiveness of this technology, readily accessible in mobile phone's front cameras, as well as the immutability of the datasets and the impossibility of anonymising them through differential privacy techniques, or of replacing them in case of hacking, gives room for serious concern. Recognition technology poses critical threats to privacy and civil liberties, such as free association and free expression. From another perspective, this disruption also threatens to affect

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ABSTRACT VIEWS

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Assisting Users in a World Full of Cameras

A Privacy-aware Infrastructure for Computer Vision Applications

Anupam Das, Martin Degeling, Xiaoyou Wang, Junjue Wang, Norman Sadeh, Mahadev Satyanarayanan
Carnegie Mellon Univeristy

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Abstract

Computer vision based technologies have seen widespread adoption over the recent years. This use is not limited to the rapid adoption of facial recognition technology but extends to facial expression recognition, scene recognition and more. These developments raise privacy concerns and call for novel solutions to ensure adequate user awareness, and ideally, control over the resulting collection and use of potentially sensitive data. While cameras have become ubiquitous, most of the time users are not even aware of their presence. In this paper we introduce a novel distributed privacy infrastructure for the Internet-of-Things and discuss in particular how it can help enhance user's awareness of and control over the collection and use of video data about them. The

these cameras create, process and transfer personally identifiable information to an extent that often remains unknown to those being affected by the technology. Therefore regulators are now investigating particular applications of computer vision [52] and there is a growing need for tools that inform users about what data is collected and what choices they have with respect to how the data is used.

In this paper, we focus on the use of facial recognition because this technology has not only improved in accuracy and performance that surpasses human performance in certain cases [52], but also seen wide spread adoption and steady growth in the commercial sector [4]. By definition facial recognition refers to a biometric technology that identifies individuals based on their distinctive and measurable facial patterns. Traditionally, facial recognition technology has been utilized by government and law enforce-

Our PEP maintains a database for storing each user's privacy settings, e.g., to disable facial recognition during specific times of the day or when one is at a specific location.

6. Privacy-aware Video Streaming

We integrate our privacy-aware notification infrastructure with a video denaturing system to build a privacy-aware video streaming service. Our proposed system informs users of nearby cameras when they approach the vicinity of deployed cameras. It also provides users with an opt-in choice (as our default policy is opt-out) to facial recognition based services. We have developed an *automated class attendance* app as one possible application. Other use cases where facial recognition technology best fits our infrastructure include automated menu suggestion, admission to transportation systems or checkout kiosks. In the following section we will first briefly describe the different components of the face denaturing system. Next, we will describe the interactions that take place among the different components. Lastly, we present some performance and scalability results. The face denaturing system proposed by Wang et al. [54] consists of a *Face Trainer* and a *Privacy*

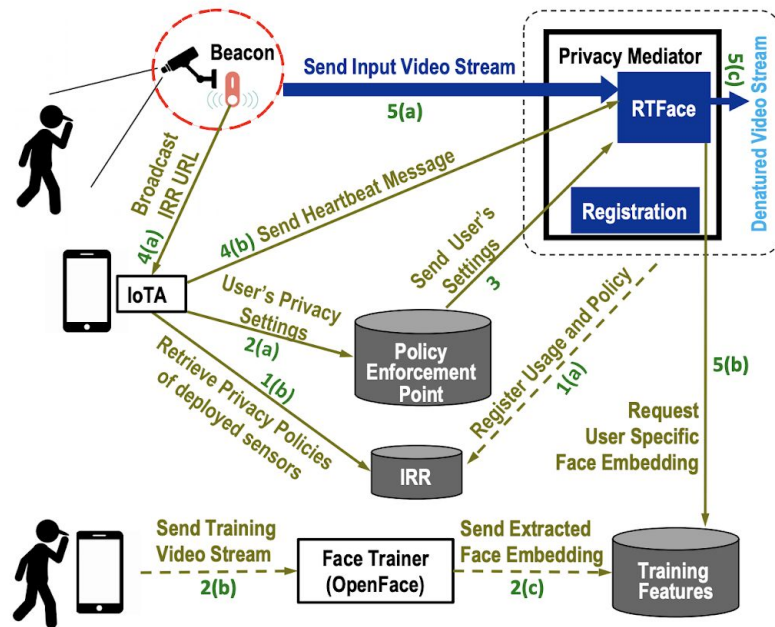
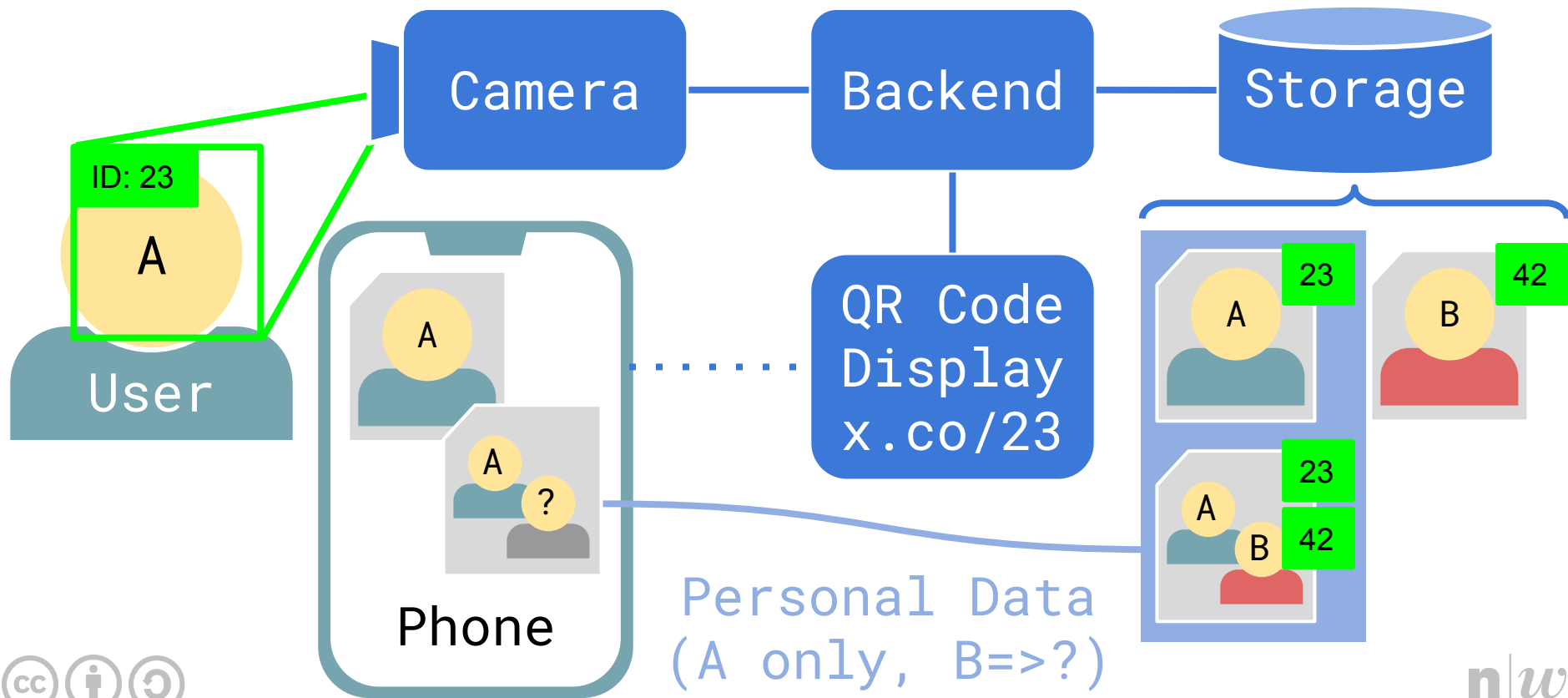


Figure 3: Privacy-aware video streaming infrastructure. Numbers in the figure correspond to the different steps in the overall work flow.

used to perform facial recognition in her vicinity. She can review the privacy policy associated with the technology and decide, e.g., on whether or not she wants to support the purpose for which the data is collected. The IoT also shows to her that a service called 'Auto

Reclaiming data with your face



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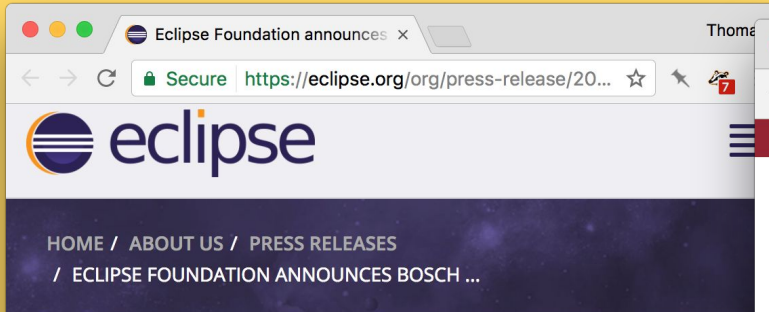
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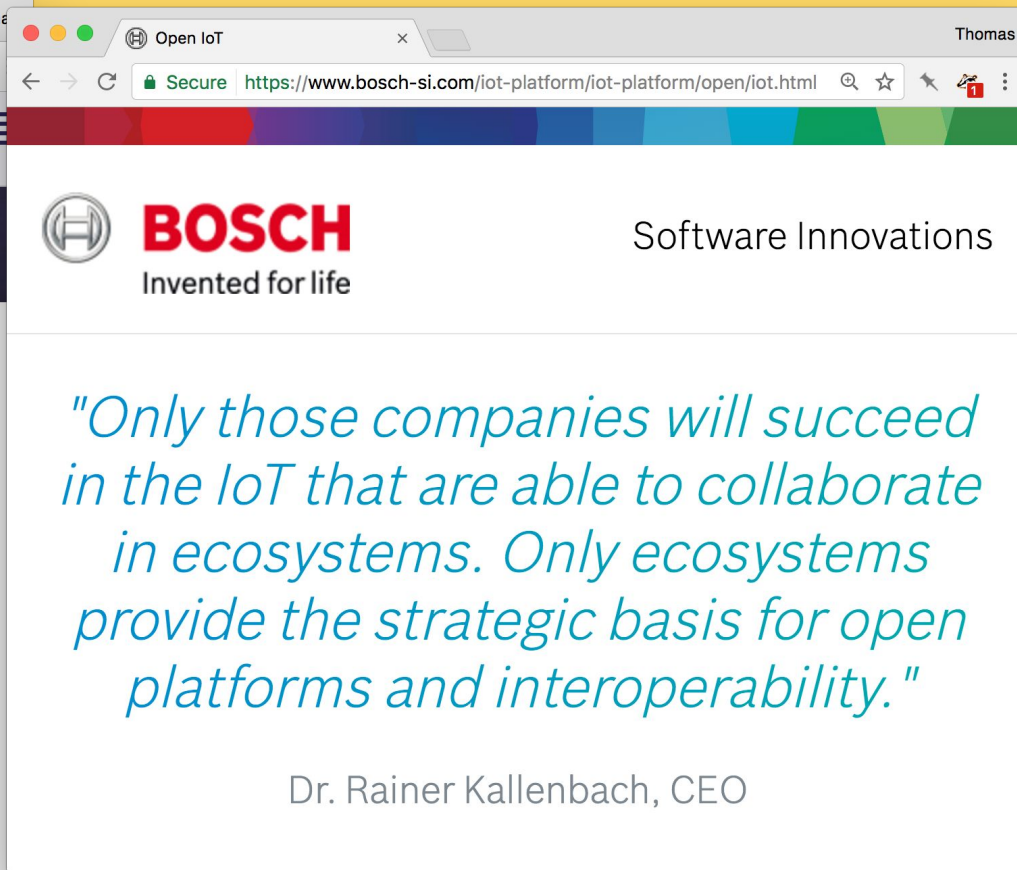
Eclipse Foundation announces Bosch as a strategic member

Ludwigsburg, Germany – November 3, 2015 – The Eclipse Foundation is pleased to announce that Bosch has become a strategic member of the Eclipse Foundation. Bosch has been a long-term solutions member of the Eclipse Foundation and is actively participating in the Eclipse Automotive Working Group and the Eclipse Internet of Things (IoT) Working Group. As a new strategic member, Bosch will now have a representative on the Eclipse Board of Directors and will be leading a number of open source projects at Eclipse. More than 10,000 Bosch engineers use the Eclipse Integrated Development Environment (IDE).

Bosch is a €49 billion global industrial corporation that provides technology and services for industries such as Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. The company is one of the largest suppliers of automotive components and is a leader in the emerging industrial IoT industry.

Bosch's involvement in the Eclipse community includes

- Participating in the Eclipse IoT and Eclipse Automotive Working Groups.
- Leading the Eclipse Vorto project, an IoT tool that allows for the creation and management of information models that describe IoT devices.





Our Vision

Smart Home adoption will only gain momentum if the different devices can be connected into over-arching use cases, but currently the market for Smart Home systems and IoT gadgets is heavily fragmented. While there are a couple of companies big enough to establish their own proprietary ecosystems, we believe that Open Source is the only viable option to provide truly open platforms without vendor lock-ins.

Many devices, one Home Base – it's app to you.

Easy operation via radio frequency and the Internet

Control and monitor devices from different brands with apps via Internet.

Connect all compatible devices from different brands via radio frequency.

Where it all comes together: the QIVICON Home Base.

QIVICON lets you bring together multiple Smart Home devices from different brands on one single platform. Not only can you easily and reliably control, monitor and automate the functions of different brands and devices, you can even combine them. Quick and easy via Smartphone, tablet or PC.

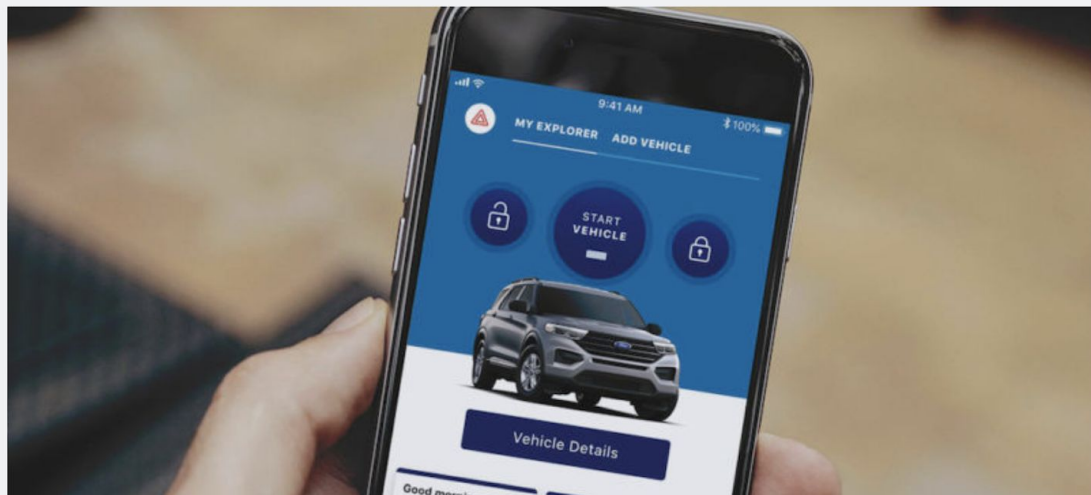
Daten- und Personensicherheit

UNSAFE AT ANY SPEED —

Five months after returning rental car, man still has remote control

Man can still track vehicle, lock and unlock it, and start and stop its engine.

DAN GOODIN - 10/28/2019, 10:35 PM



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Your WiFi-connected thermostat can take down the whole Internet. We need new regulations.

The government has to get involved in the "Internet of Things."



By **Bruce Schneier**

[Bruce Schneier](#) is a security technologist and a lecturer at the Kennedy School of Government at Harvard University. His new book, "[Click Here to Kill Everybody](#)," will be published on November 3, 2016

Late last month, popular websites like Twitter, Pinterest, Reddit and Facebook went down for most of a day. The [distributed denial-of-service attack](#) that caused the outage was the result of vulnerabilities that made the attack possible, was as much a failure of security as it was of technology. If we want to secure our increasingly computerized world, we need more government involvement in the security of the "Internet of Things" and increased regulation of what are now critical and life-threatening technologies. It's no longer a question of if, it's a question of when.

First, the facts. Those websites went down because their domain names

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As Bruce Schneier recently explained about IoT-device security, "The market can't fix this because neither the buyer nor the seller cares."

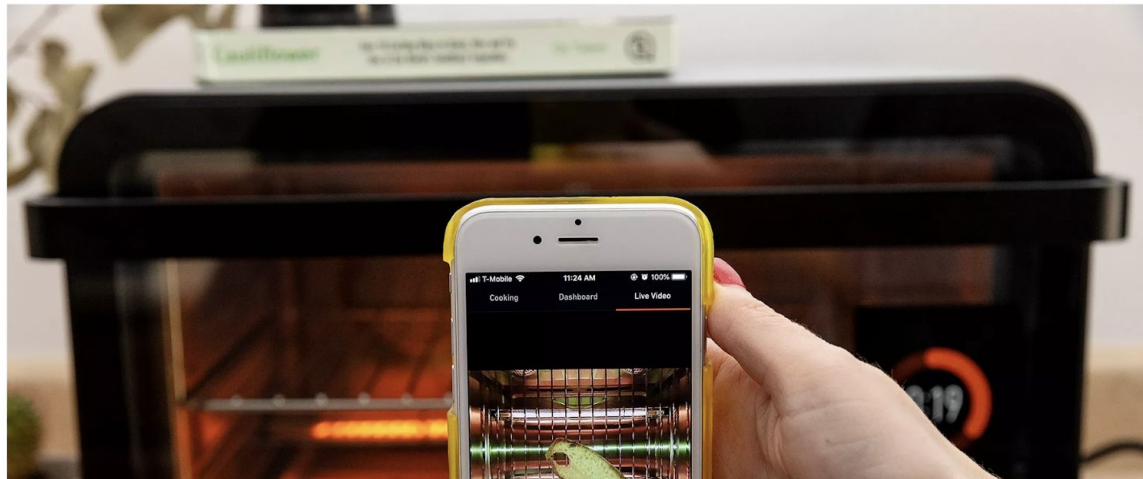
11:08 PM - 21 Oct 2016

Smart ovens have been turning on overnight and preheating to 400 degrees

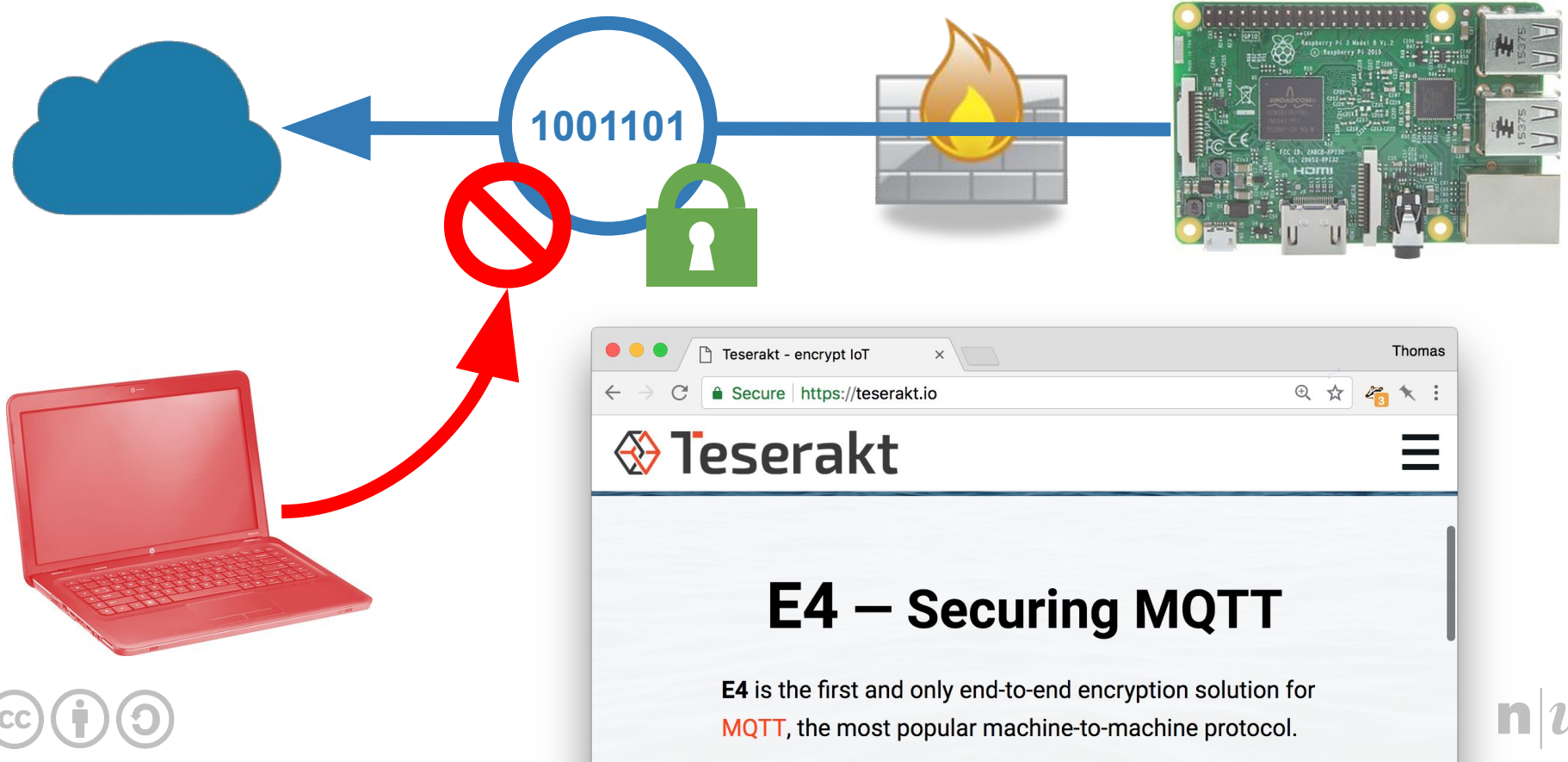
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June Oven owners are reporting preheating incidents

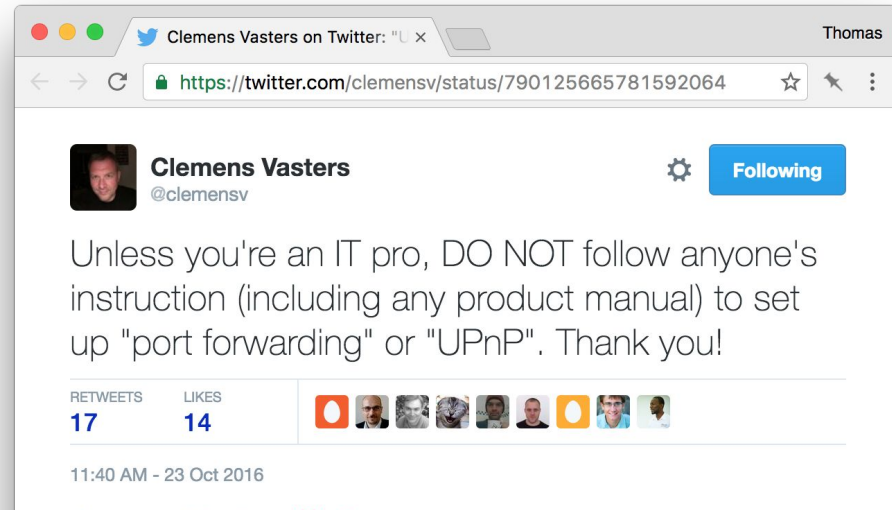
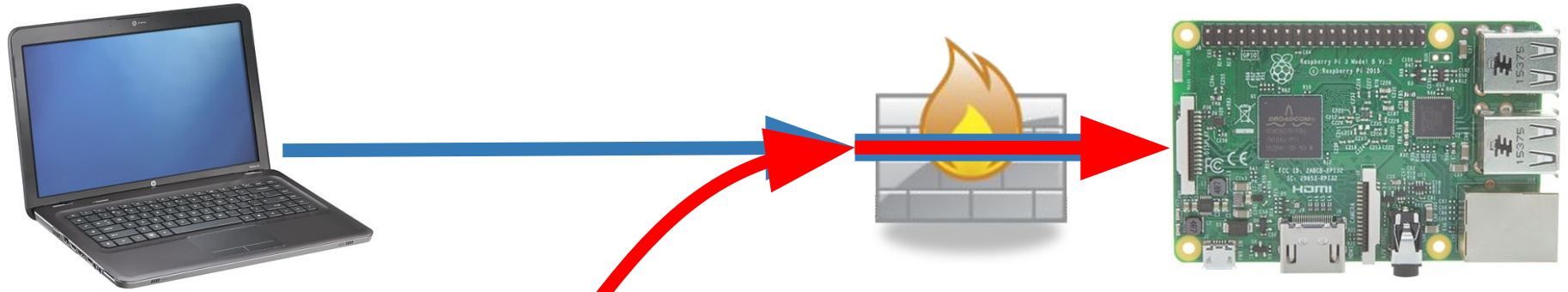
By [Ashley Carman](#) | [@ashleyrcarman](#) | Aug 14, 2019, 2:54pm EDT



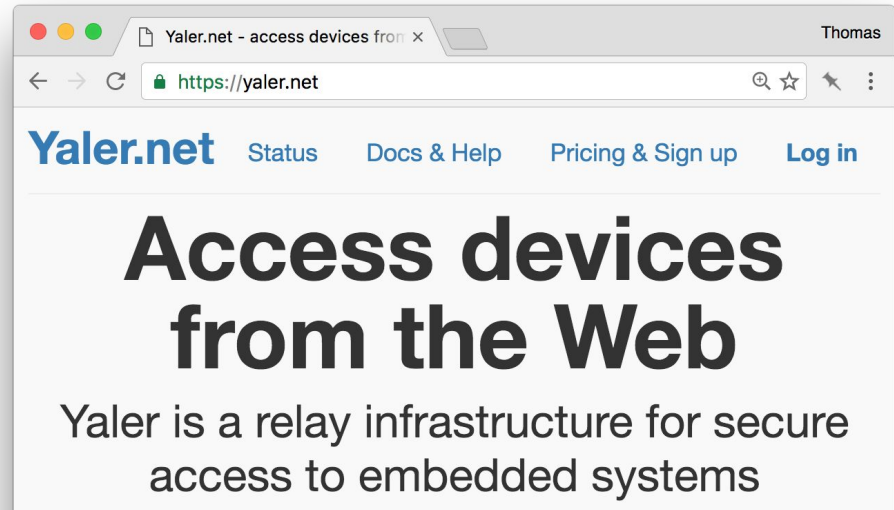
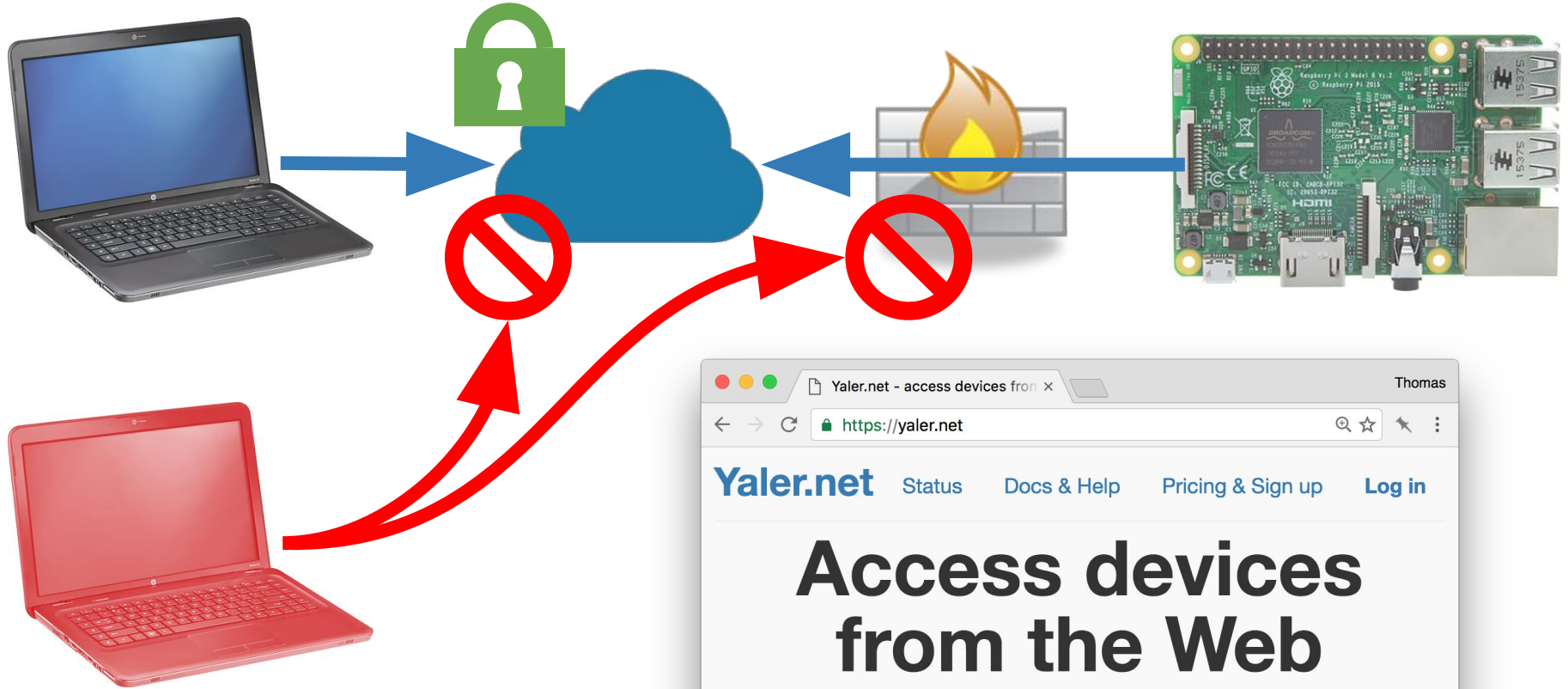
Challenge: Limitierten Ressourcen auf Endgerät



Challenge: Sicherer Fernzugriff



Challenge: Sicherer Fernzugriff



Best Practice



IIC Endpoint Security Best Practices

IIC:WHT:IN17:V1.0:PB:20180312

[Home](#) > [Consumer protection](#)

Secure by Design

The Government's Code of Practice for Consumer Internet of Things (IoT) Security for manufacturers, with guidance for consumers on smart devices at home.

Published 28 February 2019

Last updated 6 June 2019 — [see all updates](#)

From: [Department for Digital, Culture, Media & Sport](#)

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Better IoT Principles

This work by betteriot.org is licensed under [Creative Commons BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/).

Introduction

This is the latest version of a working document to develop [a certification mark for connected products](#) by IoT community members worldwide. This is a work in progress and you may [comment](#) freely, join the conversation on [Slack](#), [sign up to our newsletter](#) or give us feedback in writing (alex@iot.london) or on our [monthly open calls](#).

This is a set of principles that we think a vendor — a connected product manufacturer, team or founder — would use to make a good, secure, ethical, product that also takes into account the General Data Protection Regulation (GDPR). But also to push beyond the GDPR and look at the entire life cycle of a smart device. From manufacture, to final disposal.

Danke.

thomas.amberg@fhnw.ch

[@tamberg](#) auf Twitter

