



We are the link
between the real and
the digital world.

Secured Smart Home Solutions

Infineon's virtual show 2020



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Infinion Technologies – leading the security industry for more than 30 years



Infinion TPM used by leading PC manufacturers

(IHS 2016)



#1 TPM

(IHS 2016)

Infinion eSE used by leading handset manufacturers



#1 embedded security

(IHS 2016)

#1 eSIM Automotive

(own estimation)

Leading IoT security vendor

(Technavio 2016)

Joint Smart Home Lab



中国电子技术标准化研究院
China Electronics Standardization Institute

Reference project Street lighting



eluminocity

Leading car manufacturers trust Infineons eSIM

DAIMLER

Connected Secure Systems delivers security for a connected world



Core applications:



Authentication, Internet of Things, Access Control, Automotive, Governmental identification documents, Mobile communications, Ticketing, Trusted Computing, Payment systems

ESS – Trust anchor and authentication solutions for embedded applications



Smartphone



Mobility



IoT & Infrastructure



Consumer Electronics



Market leader for **authentication** solutions for **securing batteries & accessories** across a large field of applications. Leading provider for trusted **authentication** solutions for **Qi 1.3 wireless charging**.

Leading player in the **eSIM** market for cellular-connected **consumer devices & IoT / M2M** communication. Stable position as number three in **Classic SIM** & tailored **5G SIM** offering, which is perfectly tuned for high-speed mobile networks. Infineon hardware is in widespread use for **emergency call** (eCall) functionality in cars.

Leading in **connected car (C-V2X) system solutions** & automotive tailored **Trusted Platform Module (TPM)** offering for gateway protection. Every second **business laptop** comes with an Infineon **TPM**. Leader in **IoT & Infrastructure**: tailored product offering from node to core including simple **cloud connectivity** for all verticals.

Agenda

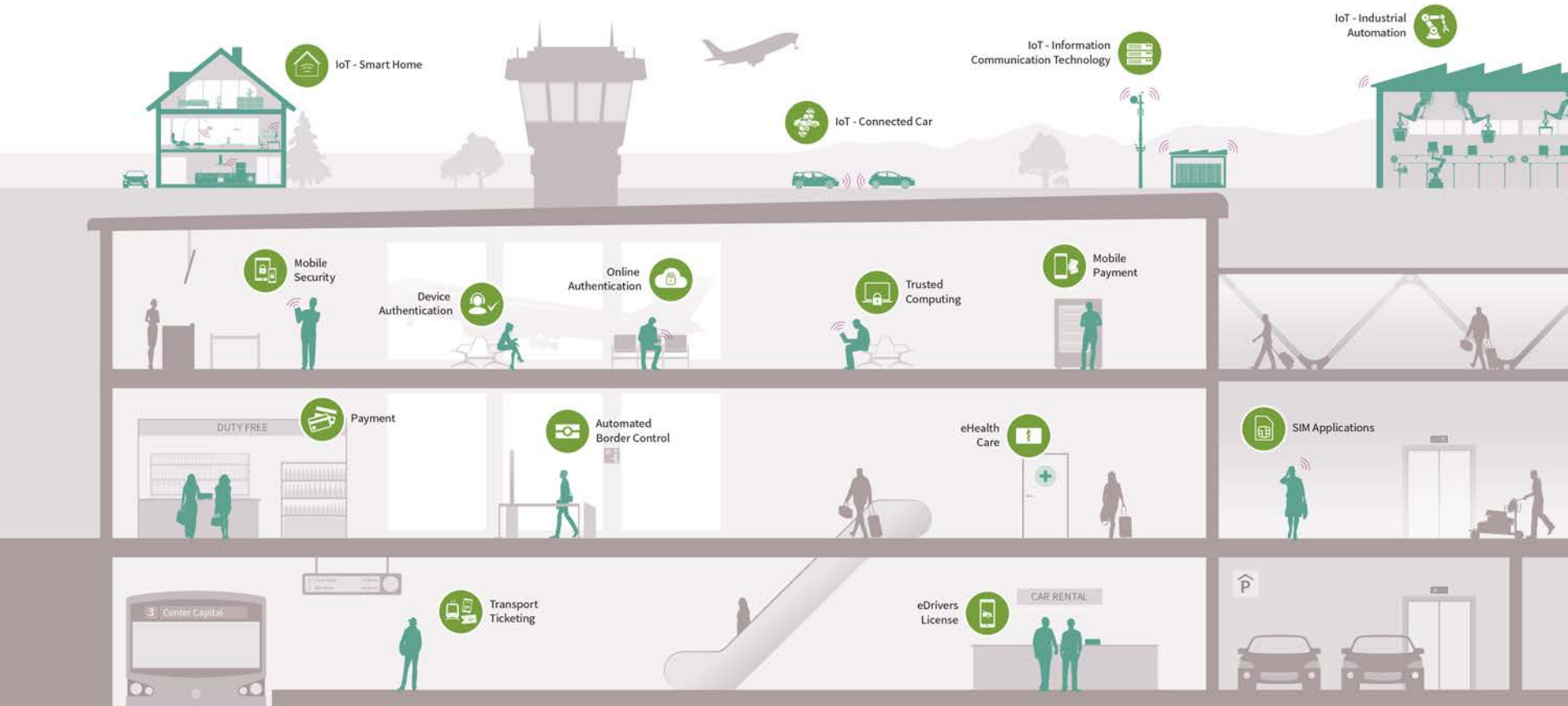
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We see connected devices all over the world



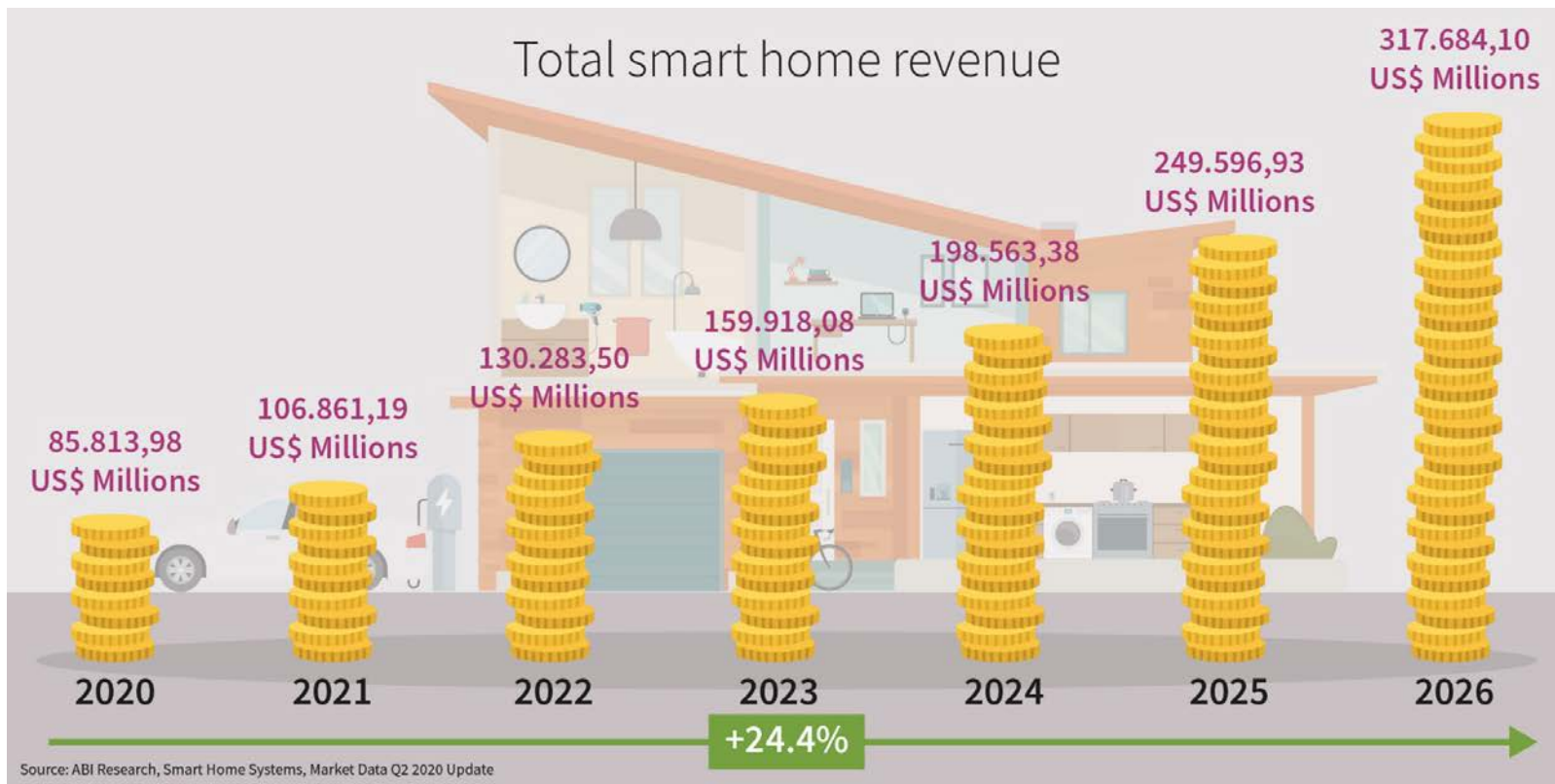
What is a smart home?



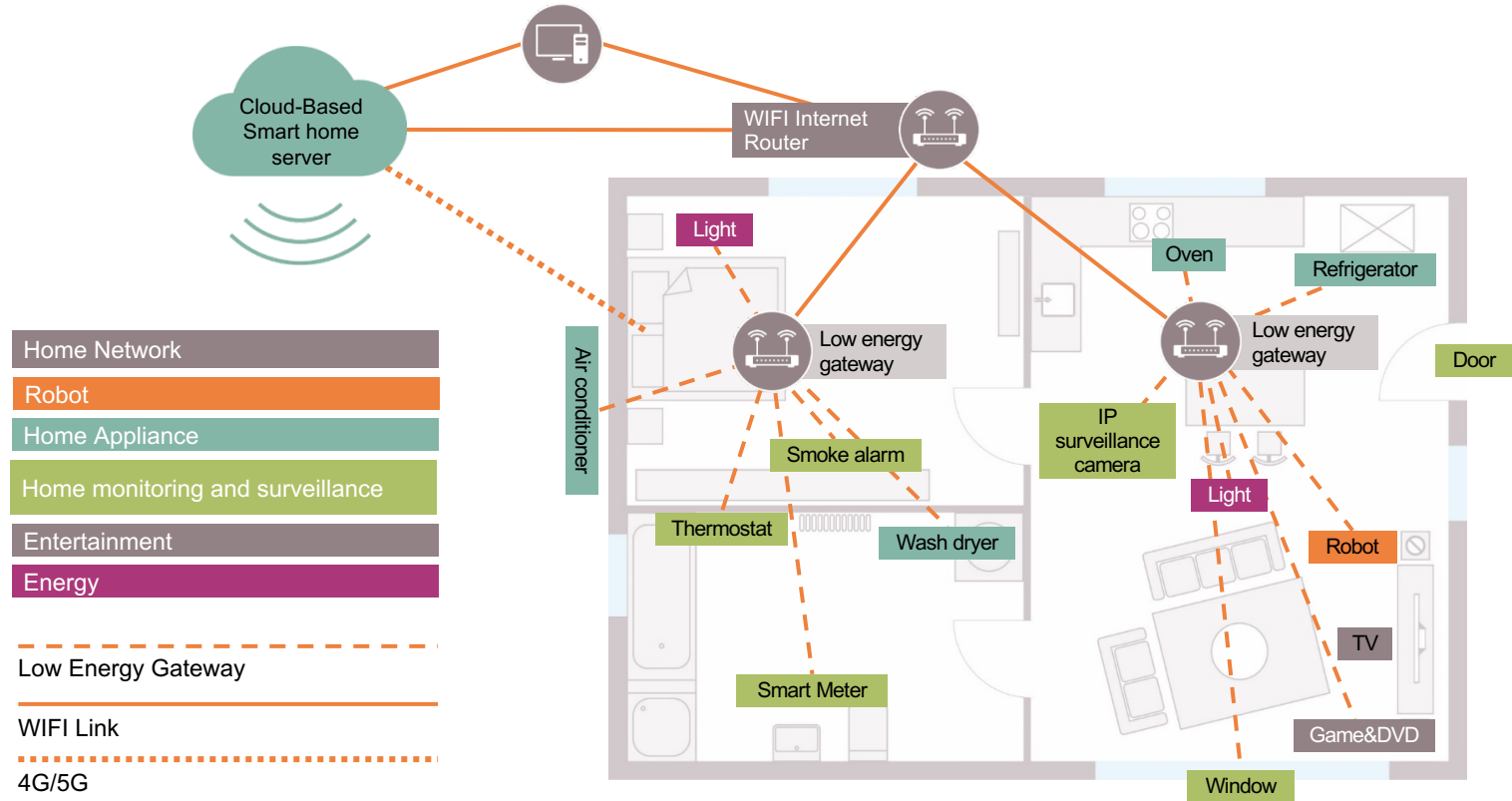
A **smart home** is a home that provides increased **user convenience** and **energy efficiency** based on **smart** and **secured** devices, functionalities and services which can be **controlled remotely** or interact or provide data automated based on **intelligent sensing** and **situational awareness**.

Infineon Technologies AG

Smart home – one of the most attractive markets

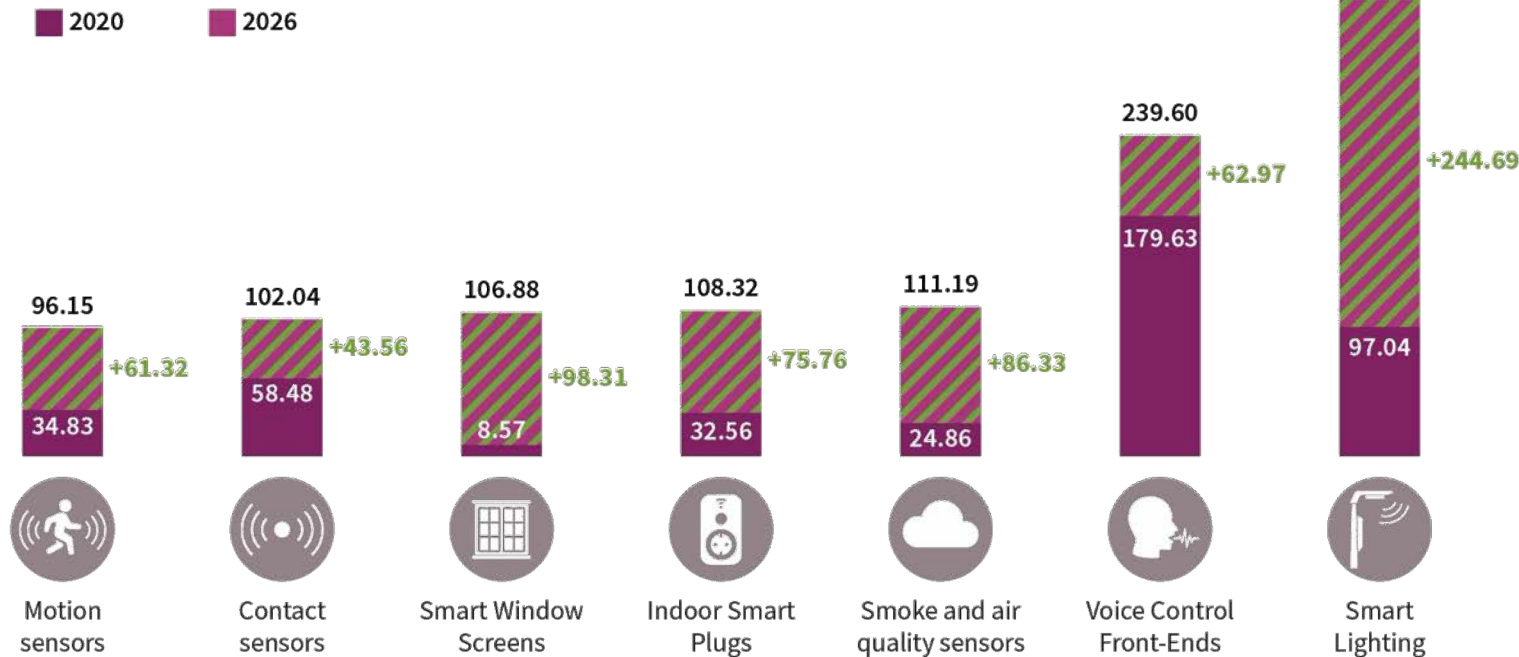


An example of a smart home



Smart Home – a market with huge potential

Expected growth of key devices



Source: ABI Research, Smart Home Systems, Market Data Q2 2020 Update

Not only growth trends are seen within smart home

5 expected trends



Increasing standardization

Need for seamless connectivity and easy integration of smart home devices due to an increasing number of devices



Smart homes actually become smart, thanks to machine learning

Future AI novelties will increase convenience in smart homes



Faster networks mean smarter homes

More powerful networks lead to better access to data & processing resources and help to realize more demanding applications



In-home healthcare gets smarter

Devices that track health or offer interventionist services are playing an increasingly important role due to growing life expectancy



Robots in the home

They can be assigned more and more tasks that help elderly and disabled people to cope with their daily lives

Source: www.forbes.com, "The 5 Biggest Smart Home Trends In 2020"

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Security for connected devices

Security is the **#1 concern** when implementing IoT solutions*

Device

Differentiate products
with anti-counterfeiting and
Intellectual Property (e.g.
software) protection



System and Service

- › **Protect Brand Image**
- › **Prevent system downtime** caused by fraud and manipulation
- › **Enable new business models**
e.g. pay per use, subscription services



* Source: Forrester Consulting and Cisco 03/2015

Main security concerns for our customers



Identity Protection
against **Fake Devices**



Protection against
Eavesdropping

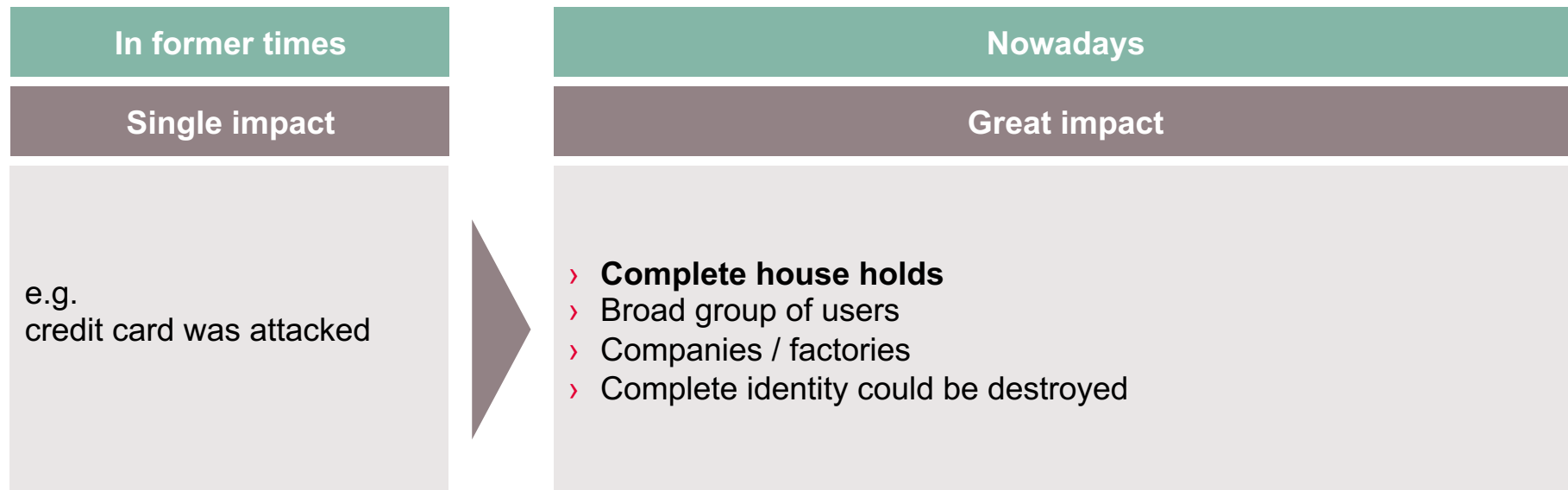


Protection against **the Manipulation of the Data**



Protection against
illegal Update of Firmware

Not only a single impact anymore...



Damage caused by millions of devices could be great!

Attacks are effecting all of us...

German internet outage was failed botnet attempt: report



- › "The framework of the attack, it was attempted to turn the routers into a part of a botnet"
- › More then 900.000 effected customers

<http://www.reuters.com/article/us-deutsche-telekom-outages-idUSKBN13N12K>



Update 3:45 p.m. ET

Shortly after resolving the early morning attack, Dyn reported another DDoS attack "against our Dyn Managed DNS infrastructure," which it said was resolved around 2:45 p.m. "Our engineers are still investigating and mitigating the attacks on our infrastructure," according to Dyn.

- › Up to 100.000 malicious endpoints used
- › Effected companies: Airbnb, Amazon, Fox news, PayPal, Shopify, Starbucks, Swedish government, Twitter, Visa

<http://www.pcmag.com/news/348922/ddos-attack-knocks-twitter-spotify-others-offline>



Friday's cyber attack hit 200,000 victims in at least 150 countries and that number could grow when people return to work on Monday, the head of the European Union's police agency said on Sunday.

Cyber security experts say the spread of the virus dubbed WannaCry - "ransomware" which locked up computers in car factories, hospitals, shops and schools in several countries - has slowed, but that any respite might be brief.

Europol Director Rob Wainwright told ITV's Peston on Sunday programme the attack was unique in that the ransomware was used in combination with "a worm functionality" so the infection spread automatically.

"The global reach is unprecedented. The latest count is over 200,000 victims in at least 150 countries, and those victims, many of those will be businesses, including large corporations," he said.

- › Variant of WannaCry ransomware (lock up computers)
- › Ransomware used in combination with "worm functionality" – infections spread automatically
- › Effecting more than 200.000 organizations in 150 countries

<http://money.cnn.com/2017/05/12/technology/ransomware-attack-nsa-microsoft/>

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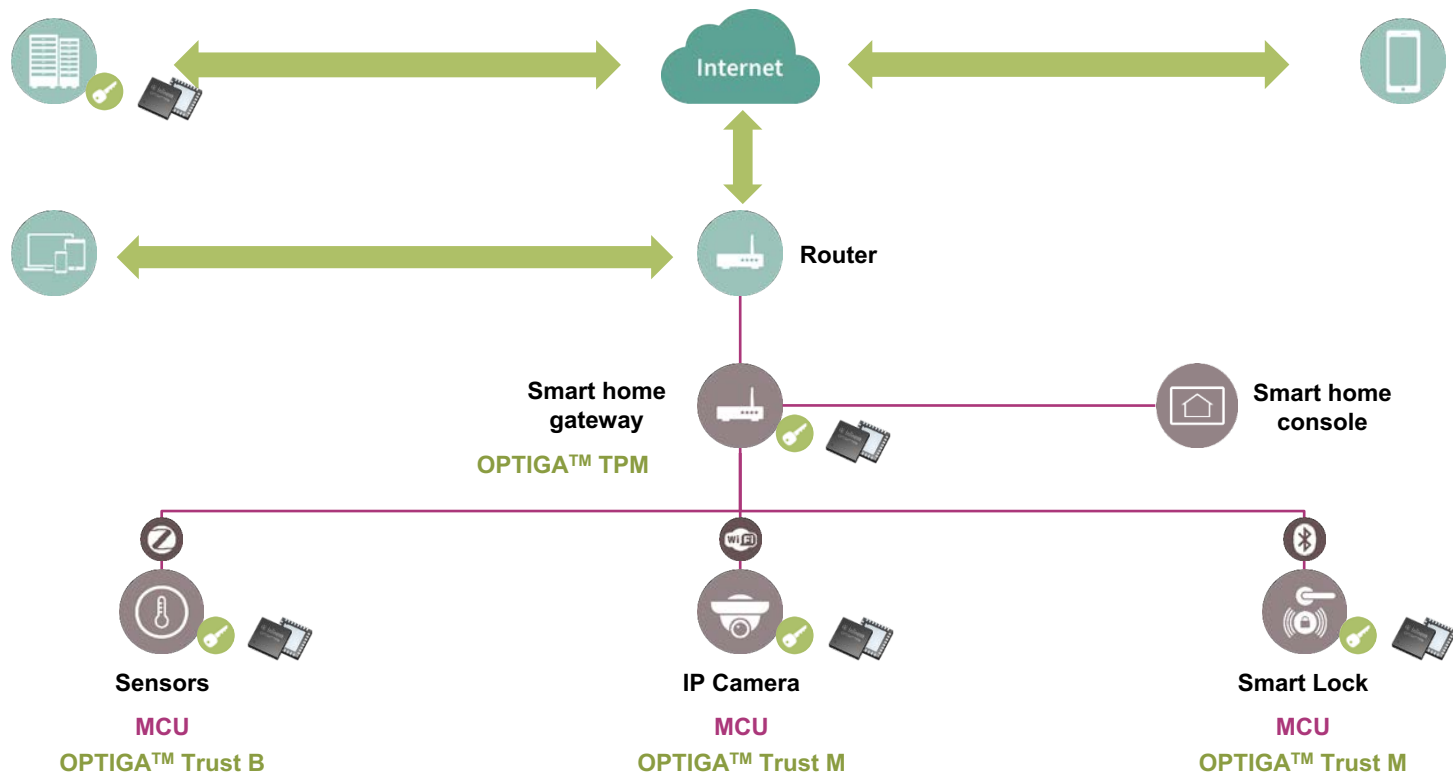
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Potential Smart home architecture



Security use cases

A close-up of a modern, black smart home control panel mounted on a wall. The panel features a small, rectangular color display on the left showing a blue background with a white house icon and several smaller icons below it (a padlock, a Wi-Fi signal, a music note, and a video camera). To the right of the display are five circular touch-sensitive buttons arranged vertically. The background of the slide is a blurred image of a modern interior space with warm lighting.

Brand protection and authentication of accessories

Mutual Authentication

Secured Communication

Secured Storage

Secured Firmware Updates

Device Platform Integrity

Infineon leads by core capabilities

- › Experience based, certified security
- › Quality leader
- › Market leadership

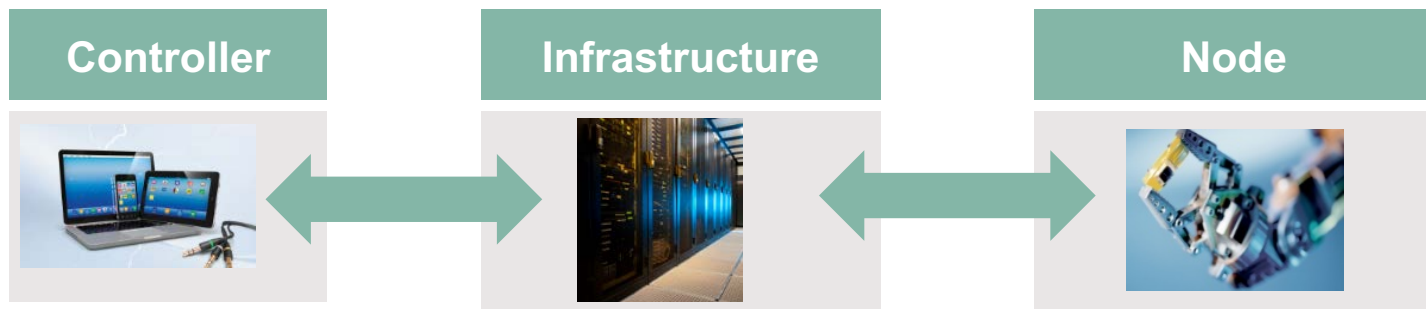
- › Security system level design expertise
- › Eco system understanding
- › Industry know how



- › Shaping the market & standards
- › Strong links to all major standardization & evaluation bodies

- › Strong support worldwide
- › Easy to integrate solutions

Solutions coupled with Service & Support



Products



- > OPTIGA™ Trust Family of products
- > OPTIGA™ TPM
- > M2M communication products

Expertise/ know-how

Threat analysis, security architecture, application know-how

Services

Secured and certified loading of keys and certificates

Partners

Network of partners for key management, design-in, distributors, etc.



Part of your life. Part of tomorrow.