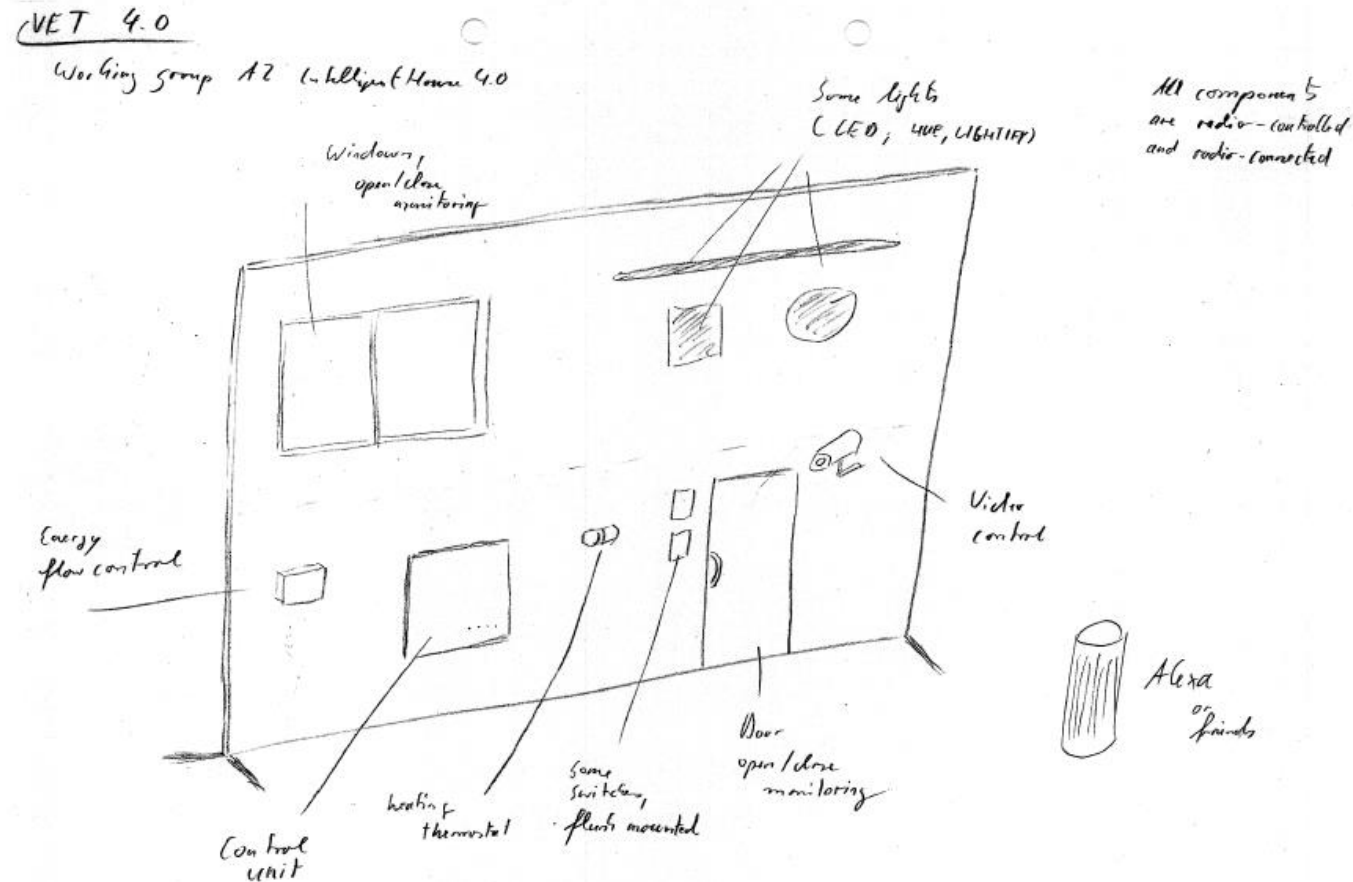




Intelligent House 4.0 Smart light control





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Intelligent House 4.0 Smart light control

A lot of companies offer Smart Home Systems

..... and the advertising promises a very easy installation.

Every one can do it.....



HomeMatic





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Intelligent House 4.0 Smart light control

Smart Home as a part of vocational education

Is it necessary?



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Intelligent House 4.0 Smart light control

**BITKOM 2018
(Germany)**

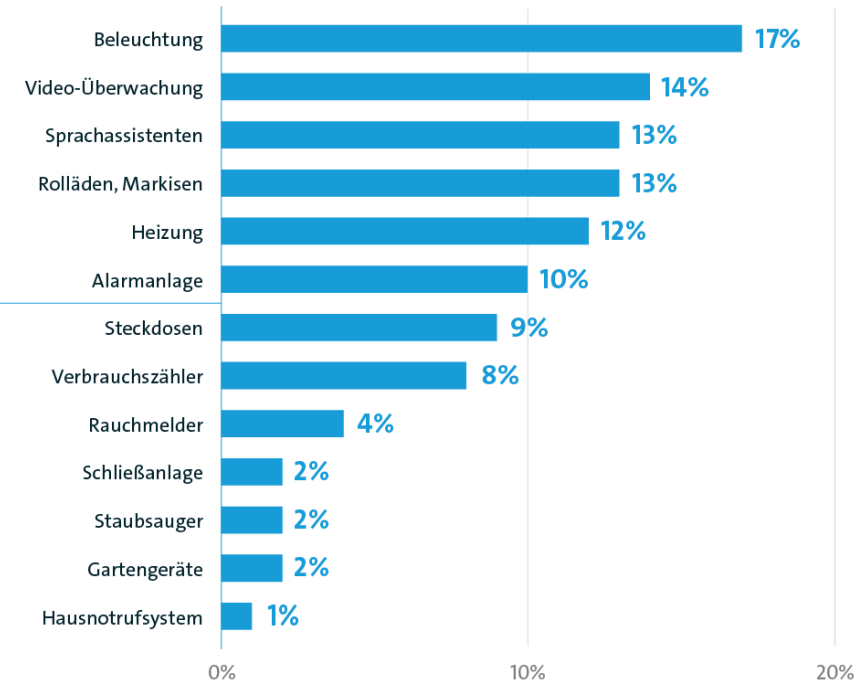
Jeder vierte Bundesbürger besitzt mindestens ein Gerät

Welche Geräte sind in Ihrem Haushalt per Internet verbunden?



26%

der Befragten haben ein
Smart-Home-Gerät mit
dem Internet verbunden.



Basis: Alle Befragten (n=1.611) | Mehrfachnennungen möglich
Quelle: Bitkom Research 2018

bitkom



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Intelligent House 4.0 Smart light control

**BITKOM 2018
(Germany)**

Techniker hilft am häufigsten bei der Installation

Wer hat Ihre Smart-Home-Anwendungen installiert bzw. in Betrieb genommen?



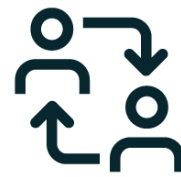
48%

Techniker,
Handwerker,
Installateur



23%

Freunde,
Bekannte,
Kollegen



16%

Familienangehöriger,
der nicht im
Haushalt wohnt



14%

Jemand
aus meinem
Haushalt



9%

Ich selbst

Basis: Besitzer von Smart-Home-Geräten (n=425) | Mehrfachnennungen möglich
Quelle: Bitkom Research 2018

bitkom



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BITKOM 2018
(Germany)

Smartphone ist Steuerungszentrale für das Smart Home

Mit welchen Geräten bedienen bzw. steuern Sie Ihre Smart-Home-Geräte und -Anwendungen?



76%
Smartphone



44%
Tablet
Computer



38%
Fernbedienung



37%
Digitaler
Sprachassistent
2016: 2%



8%
Smartwatch



8%
Laptop



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In addition to theoretical knowledge about digital home automation, the focus is on consulting. **The customer needs orientation in the diverse range of a smart home.**

- The smart home craftsman is able to install, set up and maintain the high-tech equipment.
- In addition, he is the contact person for necessary repairs or problems of a smart home and issues.
- He is the link between digital progress and traditional craft.



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Intelligent House 4.0 Smart light control

Smart Home as a part of vocational education

Is it necessary?

Yes, it is



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Intelligent House 4.0 Smart light control

“Smart Wall” for training and education



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Intelligent House 4.0 The Smart Wall (Prototype)

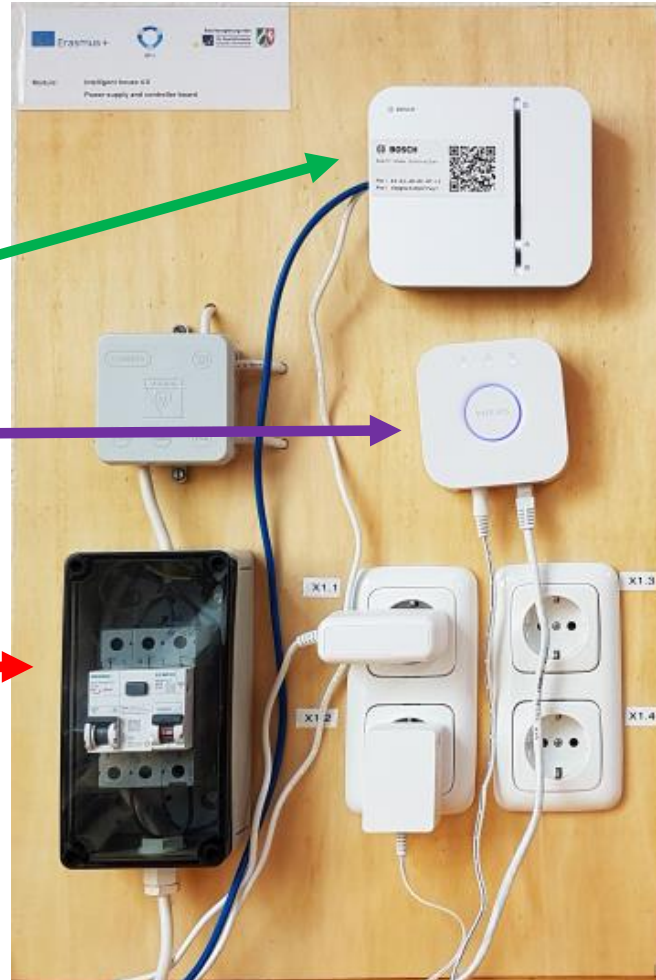
Module 1:

Smart Controller:

Bosch Smart Home
Controller

Phillips Hue Bridge

Power Supply
(Circuit breaker and RCD)

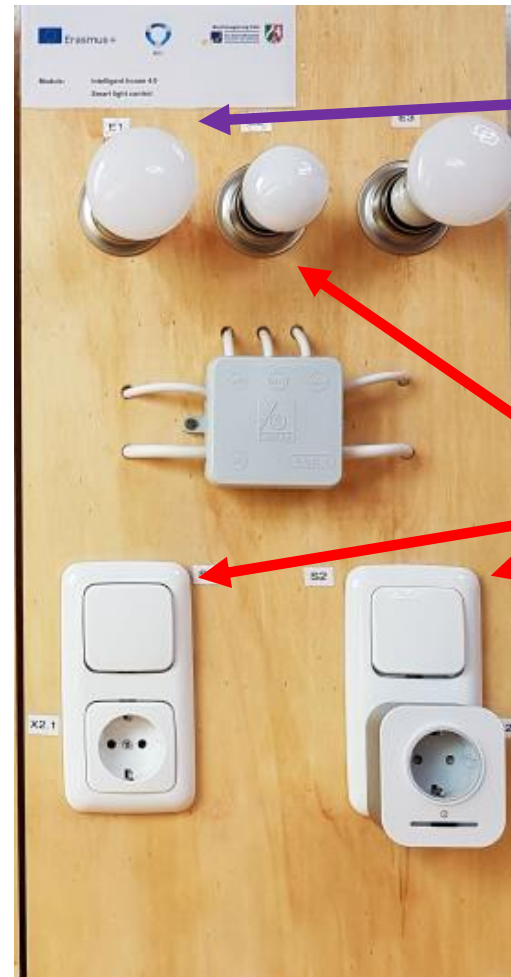


Module 2:

Phillips Hue

Two-Way Circuit

Smart Plug





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Intelligent House 4.0 **The Smart Wall, didactical decisions:**

Creating the learning module

- Setting of „the real working world“
- Professional components
- No programming skills required



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Intelligent House 4.0 **The Smart Wall, didactical decisions:**

Selection of the hardware (or why we choose Bosch?)

- professional system
- no contract or abonnement with manufacturer
- local data storage
- For function, internet access ist not neccassery
- easy configuration
- compatible with:
 - Junker and Bosch heating systems
 - Buderus heating system
 - Bosch home appliances
 - Alexa



Intelligent House 4.0 Smart light control

The task for students(example):

- Replace the two-way-circuit through smart switches
- Test two-way-circuit
- Integrate Phillips Hue into the system
- Discover the possibilities of smart light control



Step 1:

- Disable power supply



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Intelligent House 4.0 Smart light control

The task for students:

- Replace the two-way-circuit through smart switches
- Integrate Phillips Hue into the system
- Discover the possibilities of smart light control



Step 2:

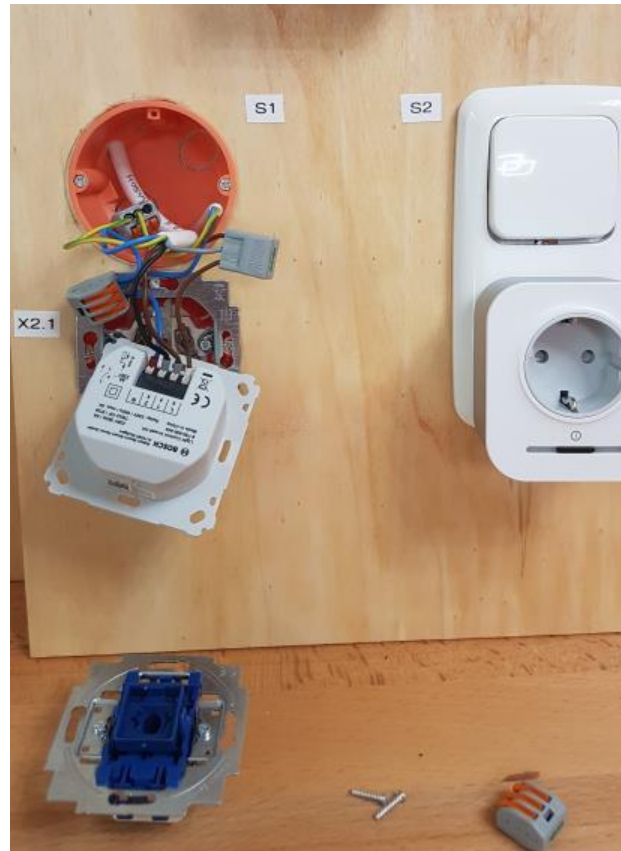
- Replace the two-way-circuit through smart switches



Intelligent House 4.0 Smart light control

The task for students:

- Replace the two-way-circuit through smart switches
- Test two-way-circuit
- Integrate Phillips Hue into the system
- Discover the possibilities of smart light control



Step 2:

- Replace the two-way-circuit through smart switches



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Intelligent House 4.0 Smart light control

The task for students:

- Replace the two-way-circuit through smart switches
- Test two-way-circuit
- Integrate Phillips Hue into the system
- Discover the possibilities of smart light control



Step 3:

- Reading QR-Code and connect device to the controller

Intelligent House 4.0 Smart light control

The task for students:

- Replace the two-way-circuit through smart switches
- Integrate Phillips Hue into the system
- Discover the possibilities of smart light control





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Intelligent House 4.0 Smart light control

The task for students:

- Replace the two-way-circuit through smart switches
- Integrate Phillips Hue into the system
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Step 4:

- Connect Hue with Smart Home Controller



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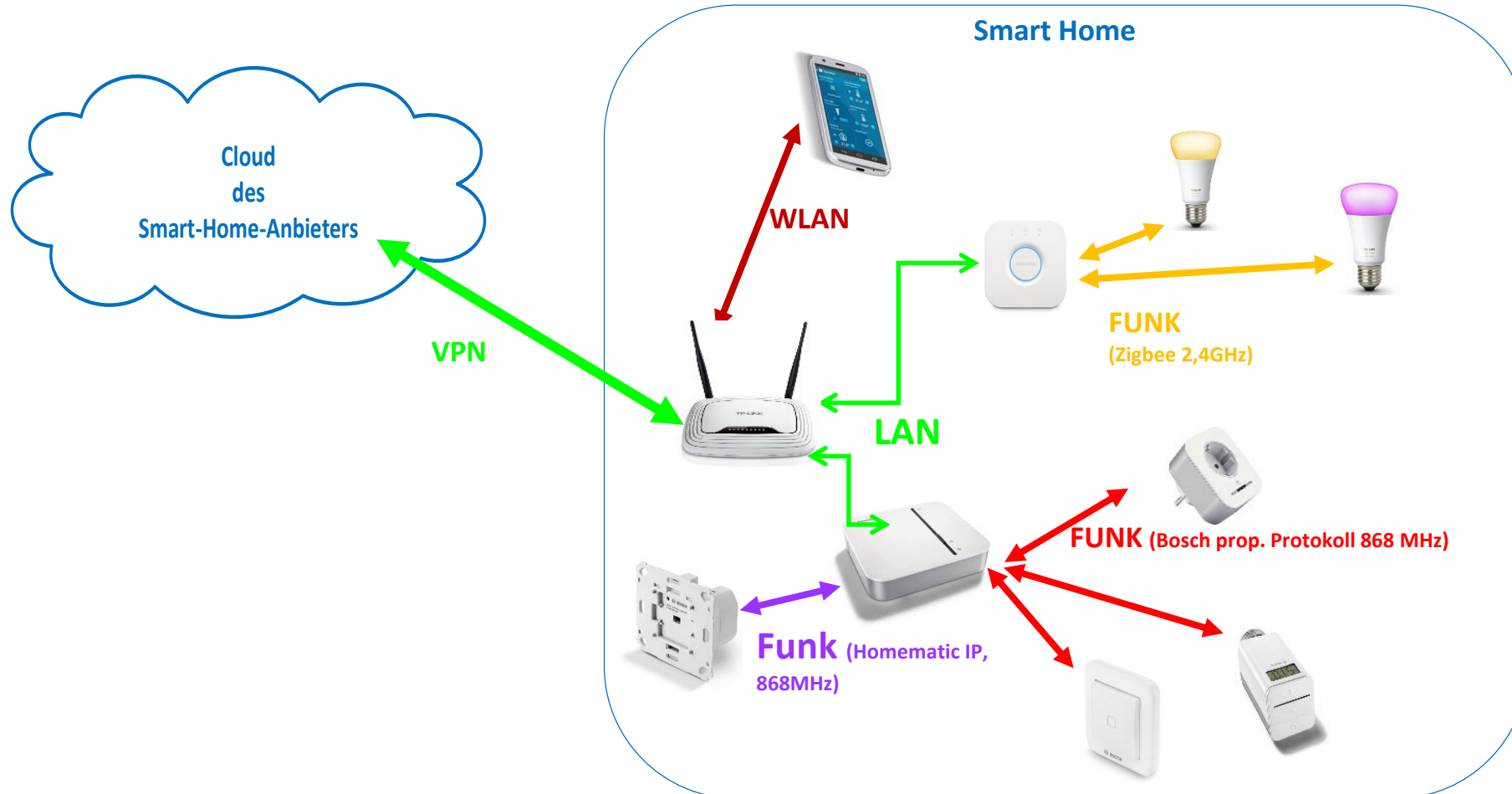
Intelligent House 4.0 The Smart Wall

Network communication:

- proprietary protocol from Bosch
- integration of Philips Hue Bridge over LAN
- Communication between Hue Bridge and Hue bulbs over Zigbee
- Homeatic IP Lichtsteuerung Unterputz und Rolladensteuerung
- WLAN zwischen Mobilgerät und Smart-Home-Netz (über WLAN-Router)

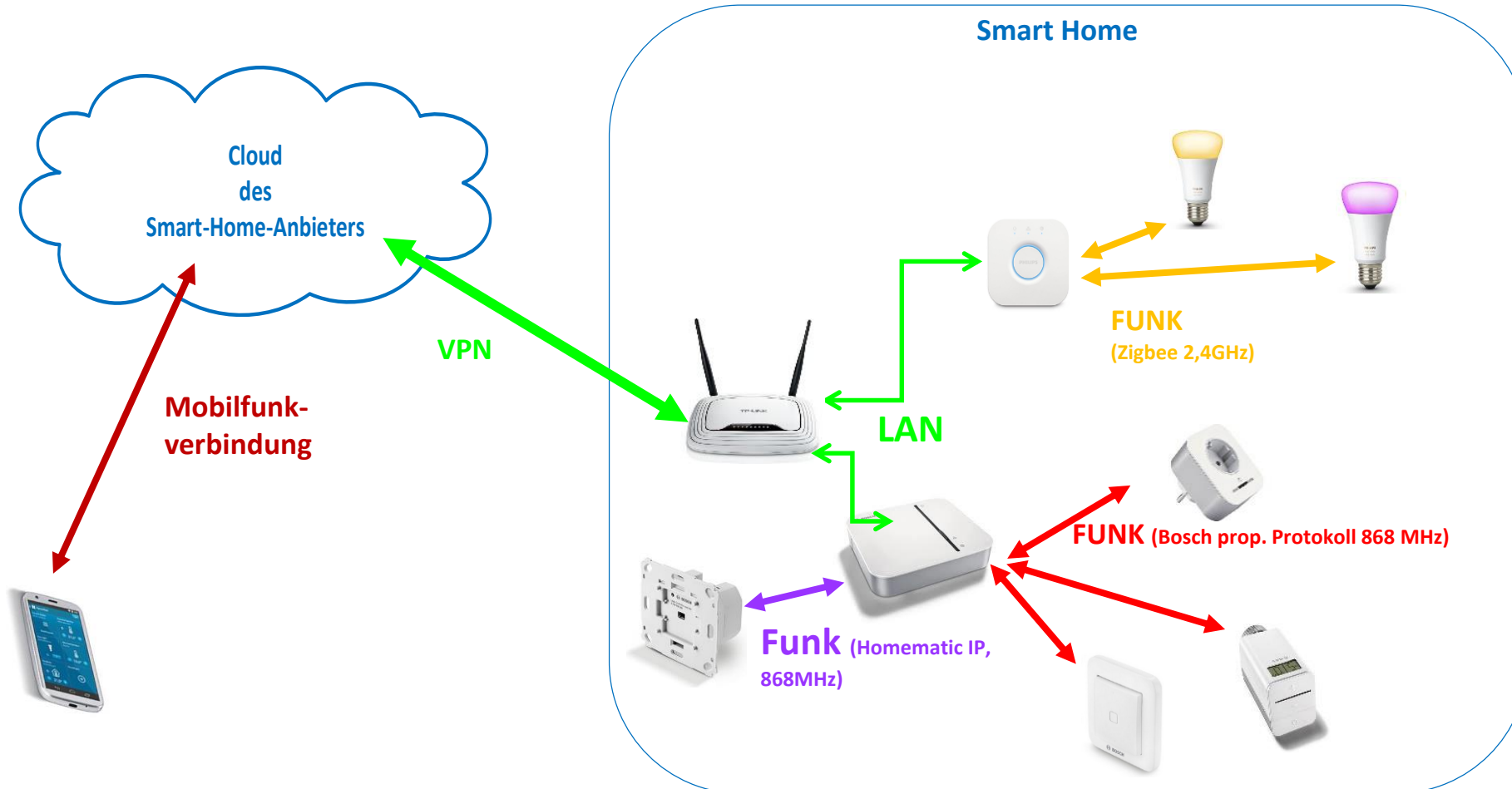


Intelligent House 4.0 Smart light control, ways of wireless communication





Intelligent House 4.0 Smart light control, ways of wireless communication

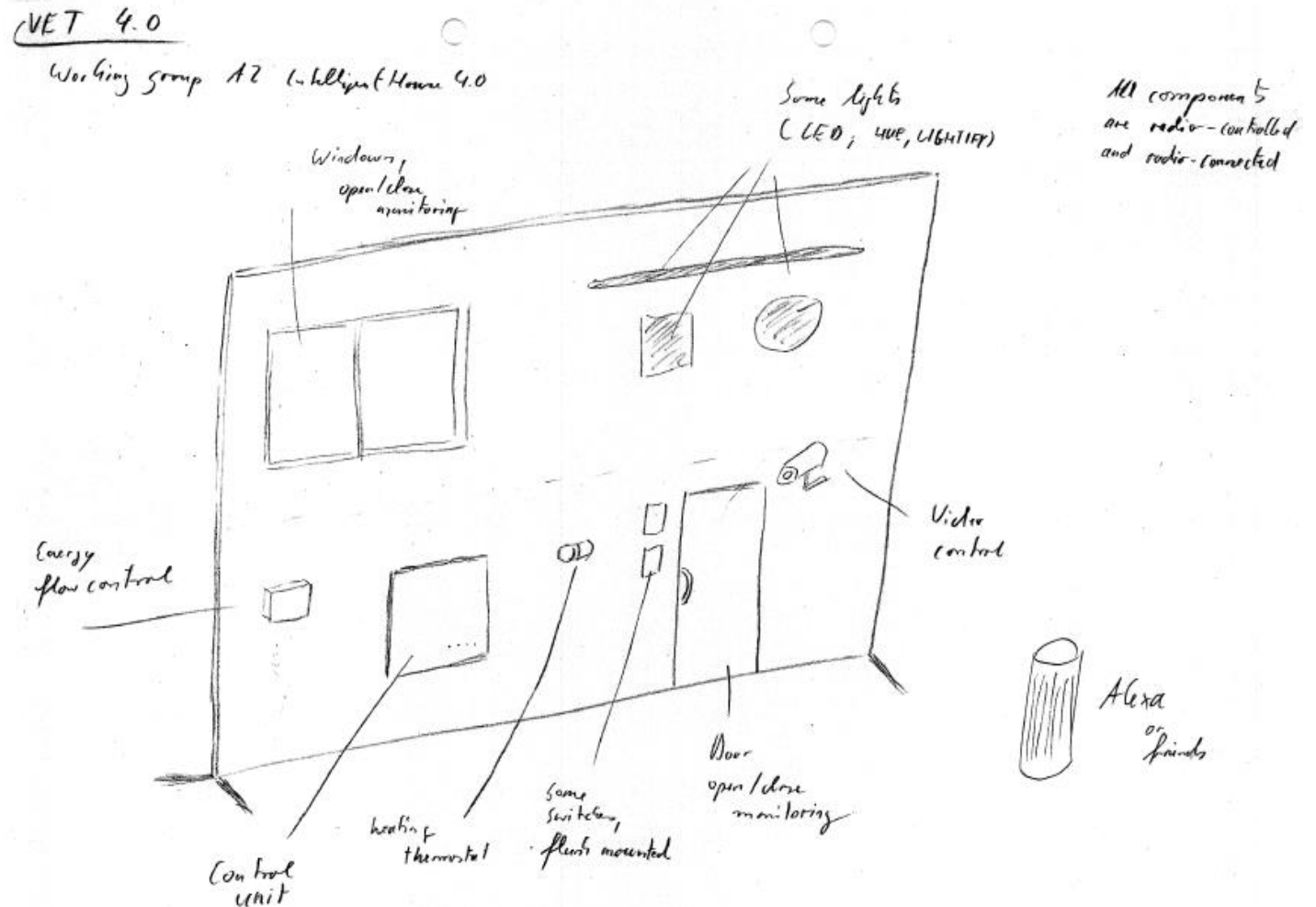




Intelligent House 4.0 Smart light control

Further developemnt „Smart Wall“:

- Voice control (alexa)
- Security
- Heating and cooling
- Comfort





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Intelligent House 4.0 Smart light control

Further development „Smart Wall“:

- <http://www.vet-4-0.eu/Securitiy>
- <https://www.bitkom.org/Presse/Presseinformation/Home-Smart-Home-Jeder-Vierte-ist-auf-dem-Weg-zum-intelligenten-Zuhause.html> Comfort



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**Thank you for
your attention**



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