

# Securing the IoT

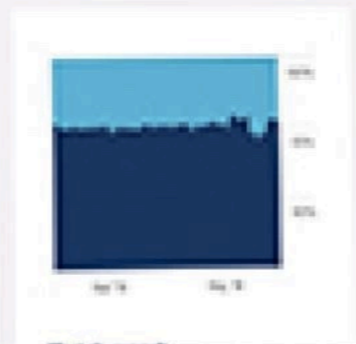
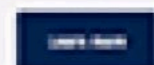






# .nl stats and data

This site provides current statistics and forecasts about the use of the .nl domain, which is managed by SIDN. With over 3.8 million registered domain names, it is the 10th largest TLD in the world.



# Stichting Internet Domeinregistratie Nederland (SIDN)

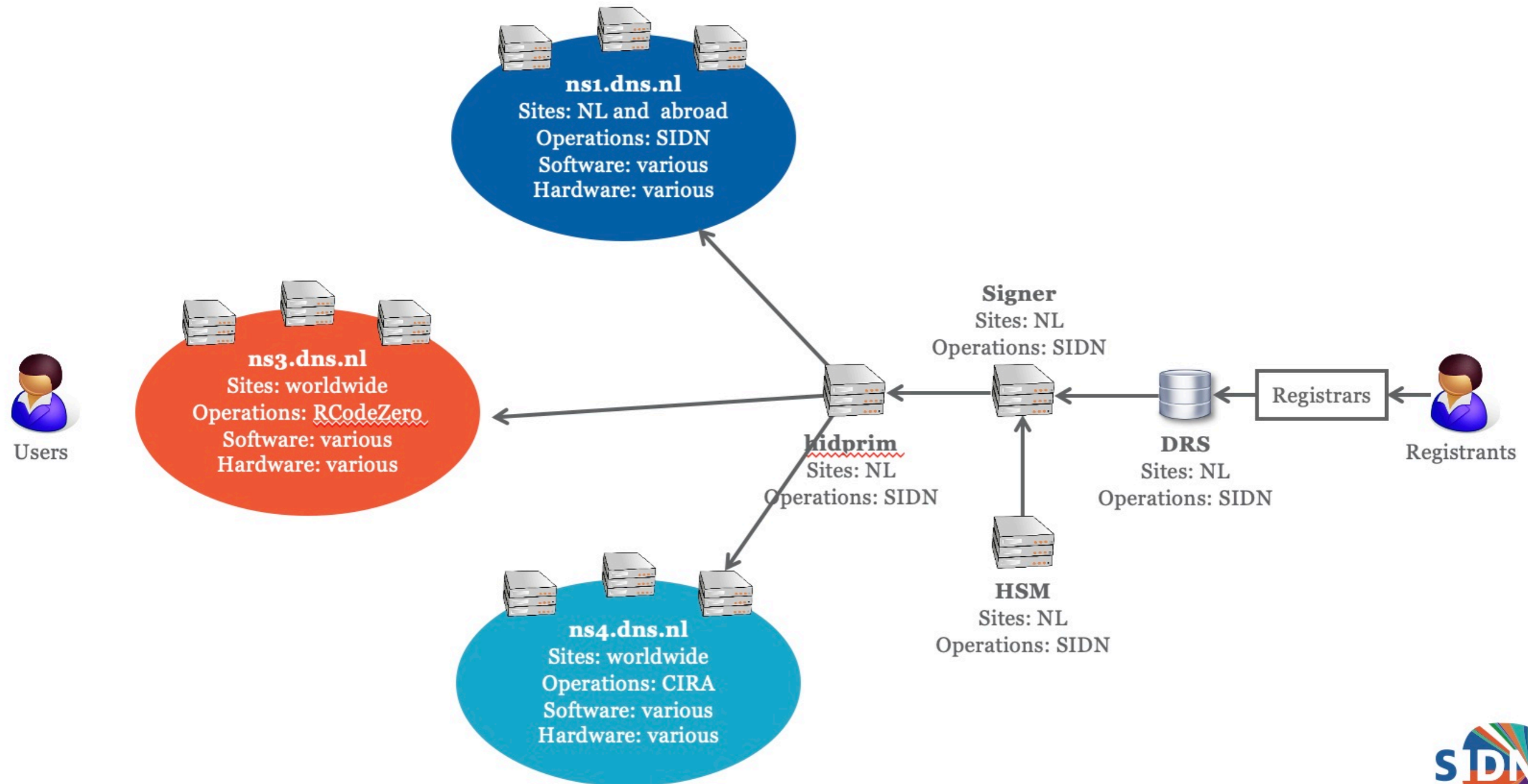
- Objective: increase society's confidence in the Internet
- Provide secure and fault-tolerant registry services for .nl
  - Anycasted DNS services with DNSSEC support
  - Registration and domain protection services
- Increase the value of the Internet in the Netherlands and elsewhere
  - Enable safe and novel uses (SIDN Fonds, IRMA)
  - Increase infrastructure security and trustworthiness (SIDN Labs)
- Private organization with a public role based in Arnhem



**.nl = the Netherlands**  
18M inhabitants  
6.2M domain names  
3.8M DNSSEC-signed  
4.0B DNS queries/day  
8.6B NTP queries/day



# Heterogeneous and fault-tolerant DNS infrastructure





# SIDN Labs



SIDN Labs  
**Maarten Wullink**  
Research engineer



SIDN Labs  
**Thymen Wabeke**  
Research engineer



SIDN Labs  
**Moritz Müller**  
Research engineer



SIDN Labs  
**Lisa Bruder**  
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**Ralph Koning**  
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**Lisa Bruder**  
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SIDN Labs  
**Caspar Schutijser**  
Research engineer



SIDN Labs  
**Cristian Hesselman**  
Directeur SIDN Labs



SIDN Labs  
**Giovane Moura**  
Data Scientist



SIDN Labs  
**Marco Davids**  
Research engineer

- Technical experts, divers in seniority and nationality
- Help SIDN teams, write open-source software, analyze large amounts of data, conduct experiments, write articles, collaborate with universities
- M.Sc students help us advance specific areas

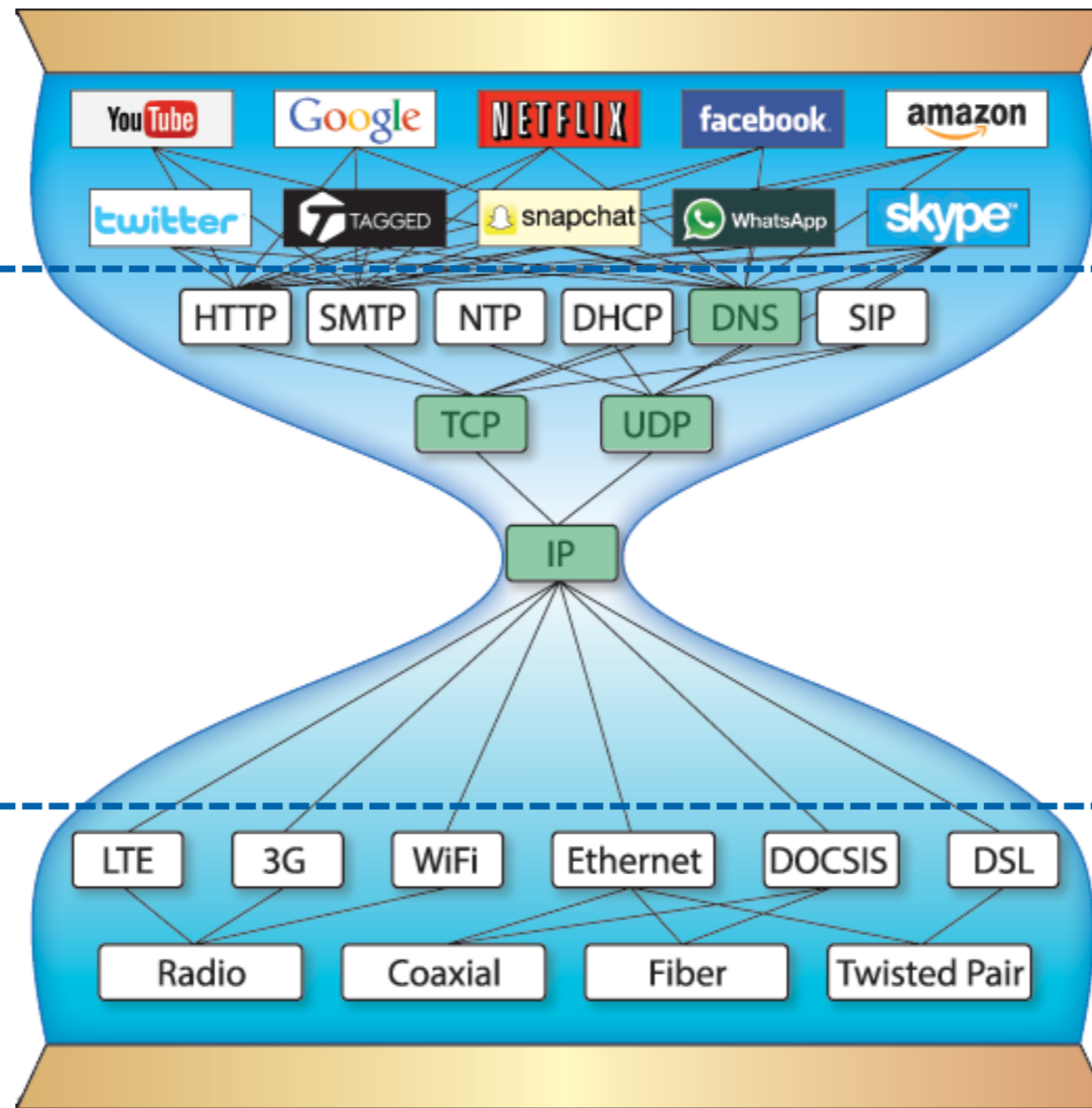


Most people

Services

Us

Transmission





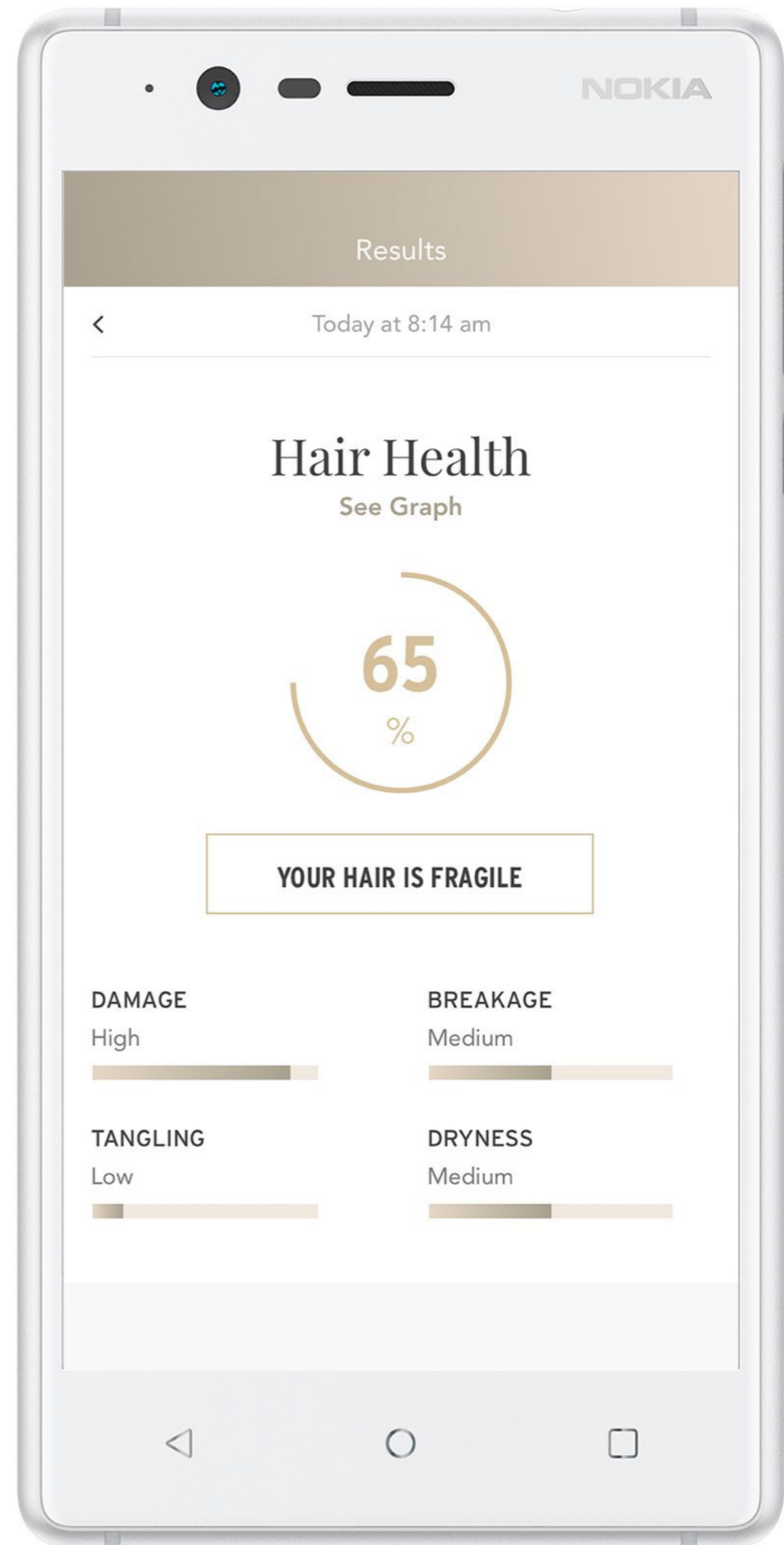


Internet of Things



















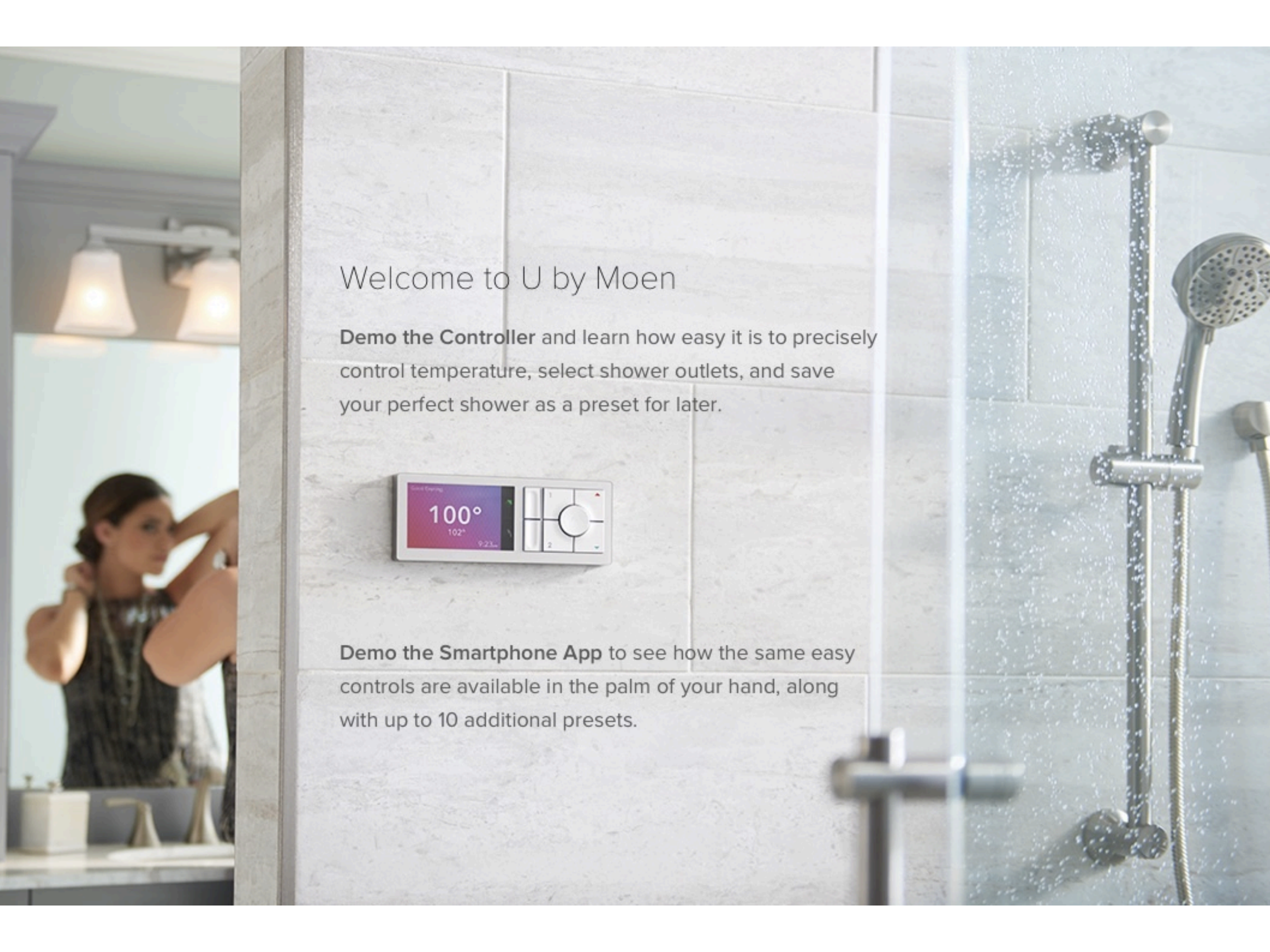
clickstick









A woman in a dark sleeveless top is looking into a large mirror in a bathroom. The mirror reflects her adjusting her hair. In the foreground, a Moen shower controller is mounted on a light-colored tiled wall. The controller has a digital display showing '100°' and '102°' with a small '9:23 AM' indicator. To the right of the display are two buttons labeled '1' and '2', and a central circular dial. To the right of the controller, a shower fixture with a handheld showerhead is visible, with water spraying from it. The background shows a shower door and a sink area with a faucet.

Welcome to U by Moen

**Demo the Controller** and learn how easy it is to precisely control temperature, select shower outlets, and save your perfect shower as a preset for later.

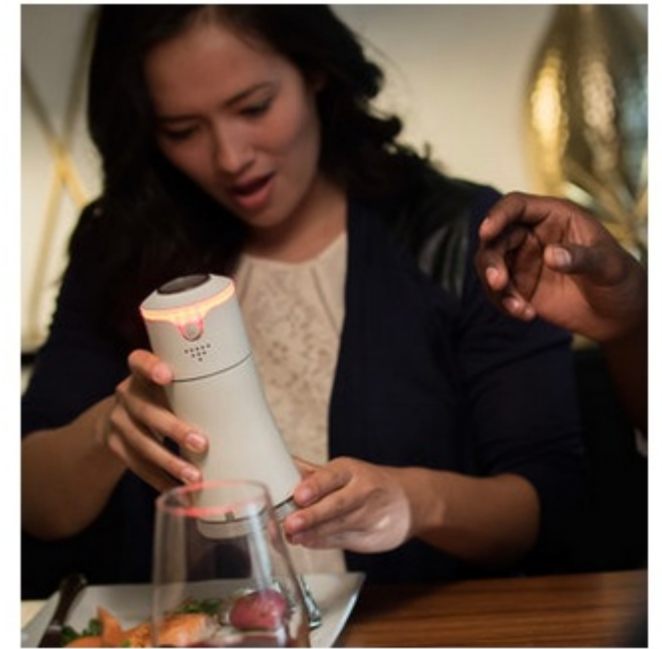
**Demo the Smartphone App** to see how the same easy controls are available in the palm of your hand, along with up to 10 additional presets.





## SMALT with voice

Connect SMALT with Amazon Echo and simply say "Alexa, dispense half a teaspoon of salt".



## Bring the flavor

SMALT dispenses salt with a shake/pinch of your smartphone screen or simply turning the dial manually.

## What does i.Con do with its data? Can I use it anonymously?

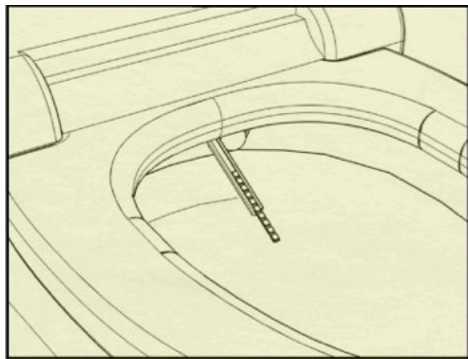
“Absolutely! All data will be kept anonymous but users will have the option to share their recent data with friends, or, indeed the world. You will be able to anonymously access stats that you can compare with i.Con users worldwide.”



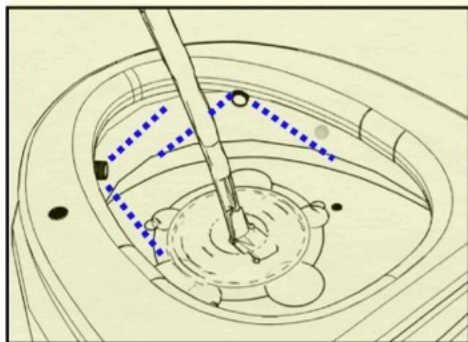




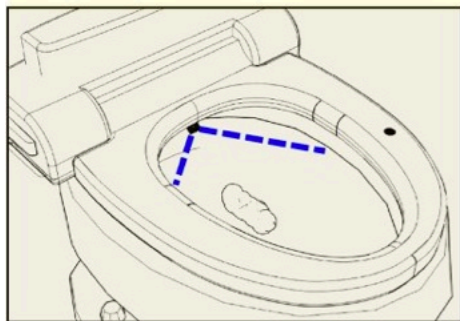




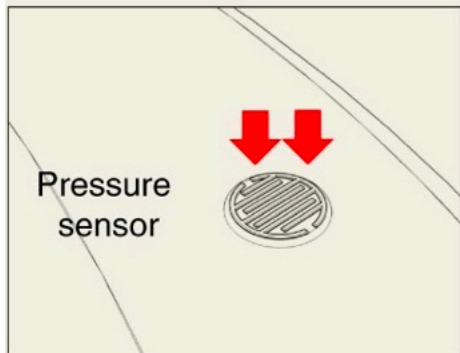
Urinalysis



Uroflowmetry



Bristol stool form scale

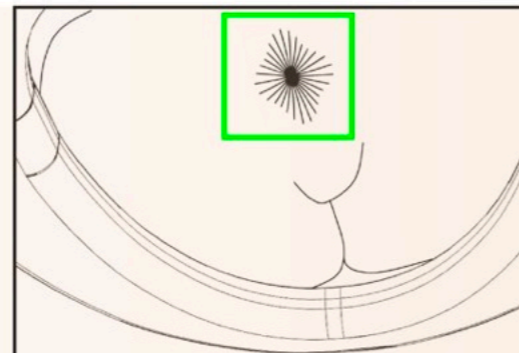


Pressure sensor

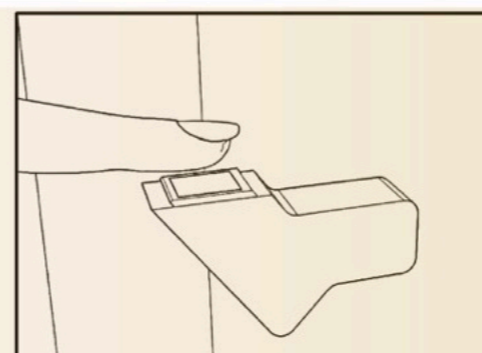
Seating time  
defecation time

- (i) Pressure sensor
- (ii) Motion sensor (PIR)
- (iii) Urinalysis strip

- (iv) Stool camera
- (v) Anus camera
- (vi) Uroflow camera



Analprint scan



Fingerprint scan



Cloud-based  
health portal



**YOU GET CONNECTED!**

**AND YOU GET CONNECTED!**

**EVERYTHING GETS CONNECTED!**



[Home](#) > [Data Protection](#) > [Internet of Things](#)

**SLIDESHOW**

# The internet of insecure things: Thousands of internet-connected devices are a security disaster in the making



By [Josh Fruhlinger](#), CSO | Oct 12, 2016 4:00 AM PT





The "S" in IoT  
stands for  
**SECURITY**







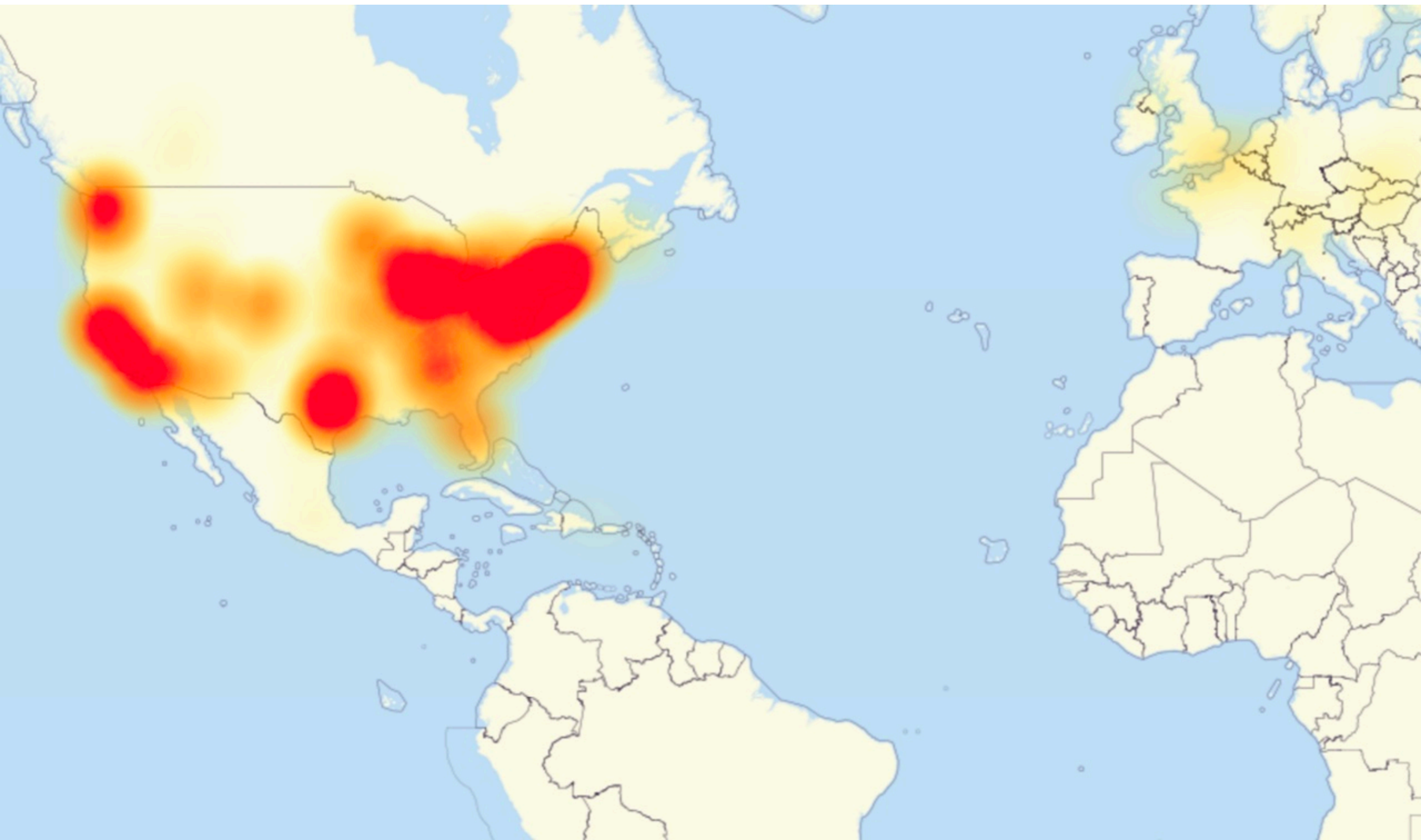


# Mirai vs Dyn<sup>SM</sup>

1.2 Tbps

From 'only' 100.000 devices







# This guy's light bulb performed a DoS attack on his entire smart house



Kashmir Hill

3/03/15 9:41am · Filed to: REAL FUTURE ▾



182





RISK ASSESSMENT —

# BrickerBot, the permanent denial-of-service botnet, is back with a vengeance

New botnet squadrons wage fiercer, more intense attacks on unsecured IoT devices.

DAN GOODIN - 4/24/2017, 10:43 PM





Home > Security > Cybercrime & Hacking



### SECURITY IS SEXY

By Darlene Storm, Computerworld | FEB 2, 2015 12:09 PM PT

#### About

Most security news is about insecurity, hacking and cyber threats, bordering on scary. But when security is done right, it's a beautiful thing...sexy even. Security IS sexy.

NEWS ANALYSIS

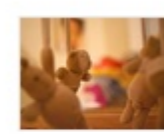
# Hacker hijacks wireless Foscam baby monitor, talks and freaks out nanny

This is the third time news has circulated about some jerk hijacking a wireless Foscam camera/baby monitor and made his virtual intrusion known by talking. Please change the default password!



#### MORE LIKE THIS

Hacker strikes again: Creep hijacks baby monitor to scream at infant and...



2 more wireless baby monitors hacked: Hackers remotely spied on babies and...



Eerie music coming from wireless baby cam; is it a



IS-1  
ST. JUDE MEDICAL  
Sylmar, CA USA  
VICTORY™ SR  
5610 SSIR  
S/N 1723182





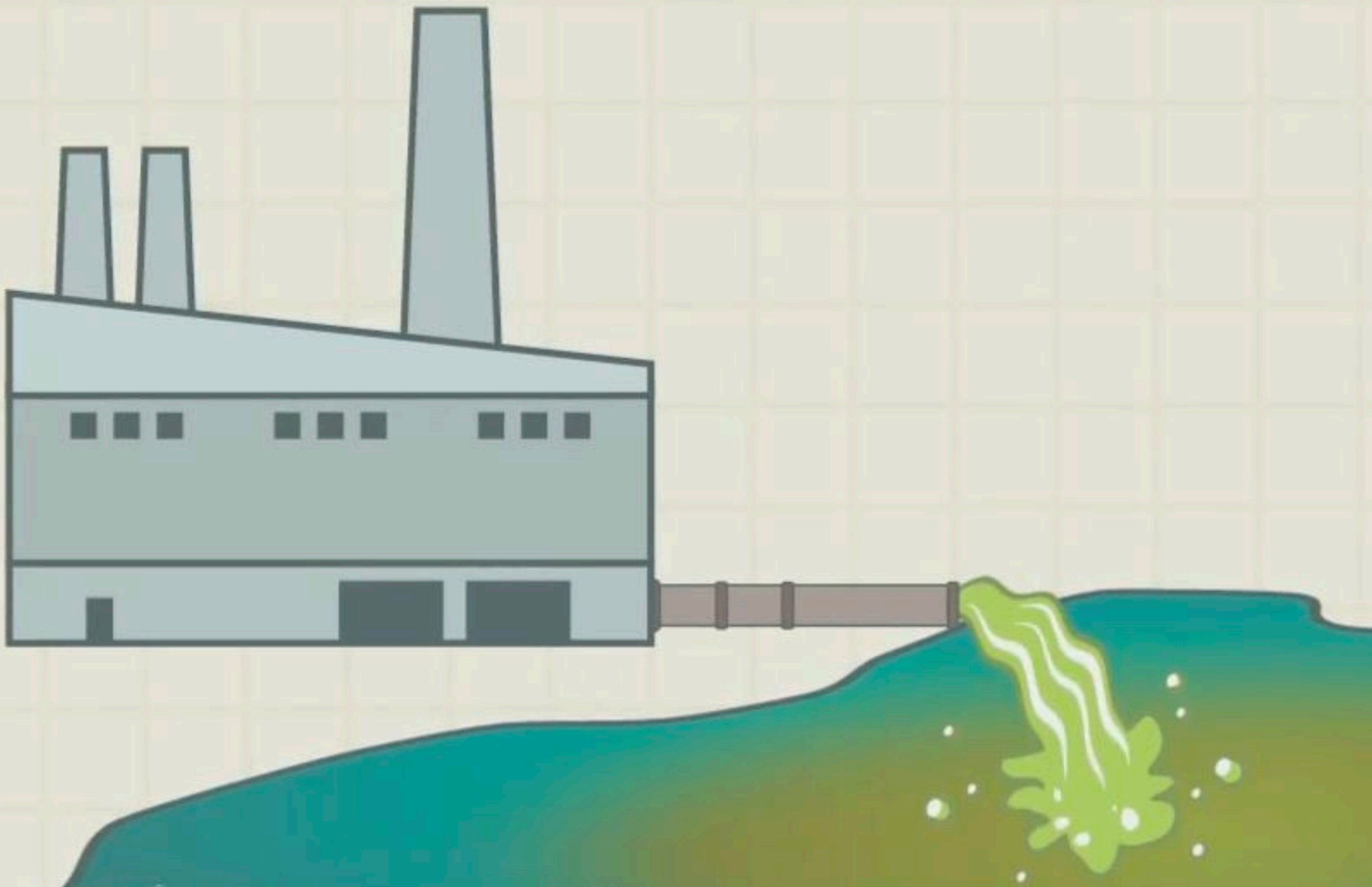






**NOT MY PROBLEM...**









**NOT MY PROBLEM...**



┌ HOW LONG YOU'VE HAD YOUR SMART APPLIANCE ─┐

6 MONTHS

1 YEAR

5 YEARS

10 YEARS

BEST-CASE



YOU'RE CONSTANTLY  
BEING RESCUED FROM  
PERIL BY A FACELESS  
TEAM OF ENGINEERS  
WHO COULD WANDER  
AWAY AT ANY TIME

YOUR APPLIANCE IS  
PART OF A BOTNET RUN  
BY ORGANIZED CRIME

WORST-CASE











# IoT products required to meet minimum security standards starting 2024

🕒 2 min. read

⚡ View original

The European Commission has imposed minimum requirements for the security of IoT products, better known as smart devices, starting in 2024. If they do not meet these standards, the product will be banned from the EU market. The EU cybersecurity requirements for consumer products have been introduced as an addition to the EU Radio Equipment Directive (RED). You can read the press release from the Dutch central government [here](#).







**DETECT SMOKE AND CO**

**CONTROL SWITCHES AND OUTLETS**



**CONTROL LIGHTING**

**CONTROL SHADES AND BLINDS**



**ADJUST CLIMATE**

**UNLOCK AND LOCK DOORS**

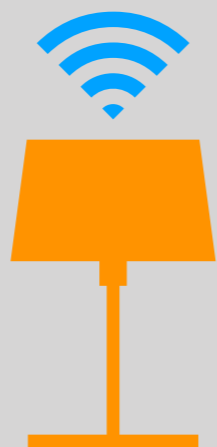
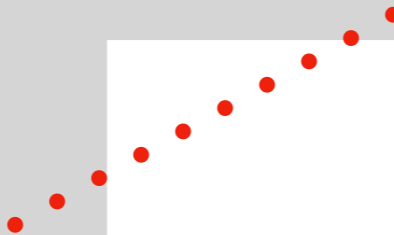
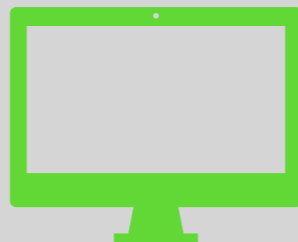
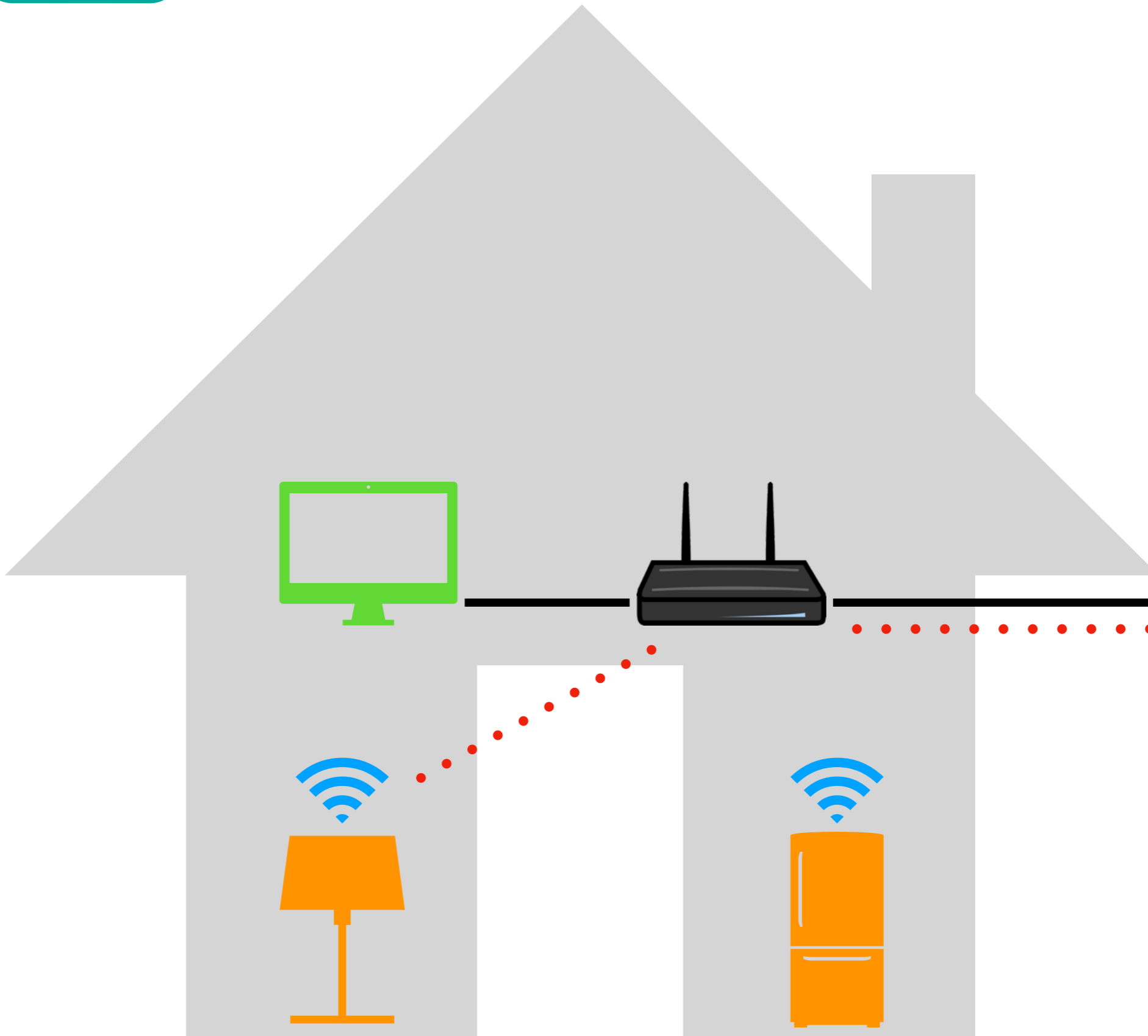
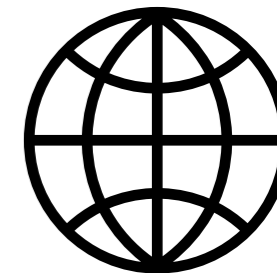


**MONITOR YOUR HOME**

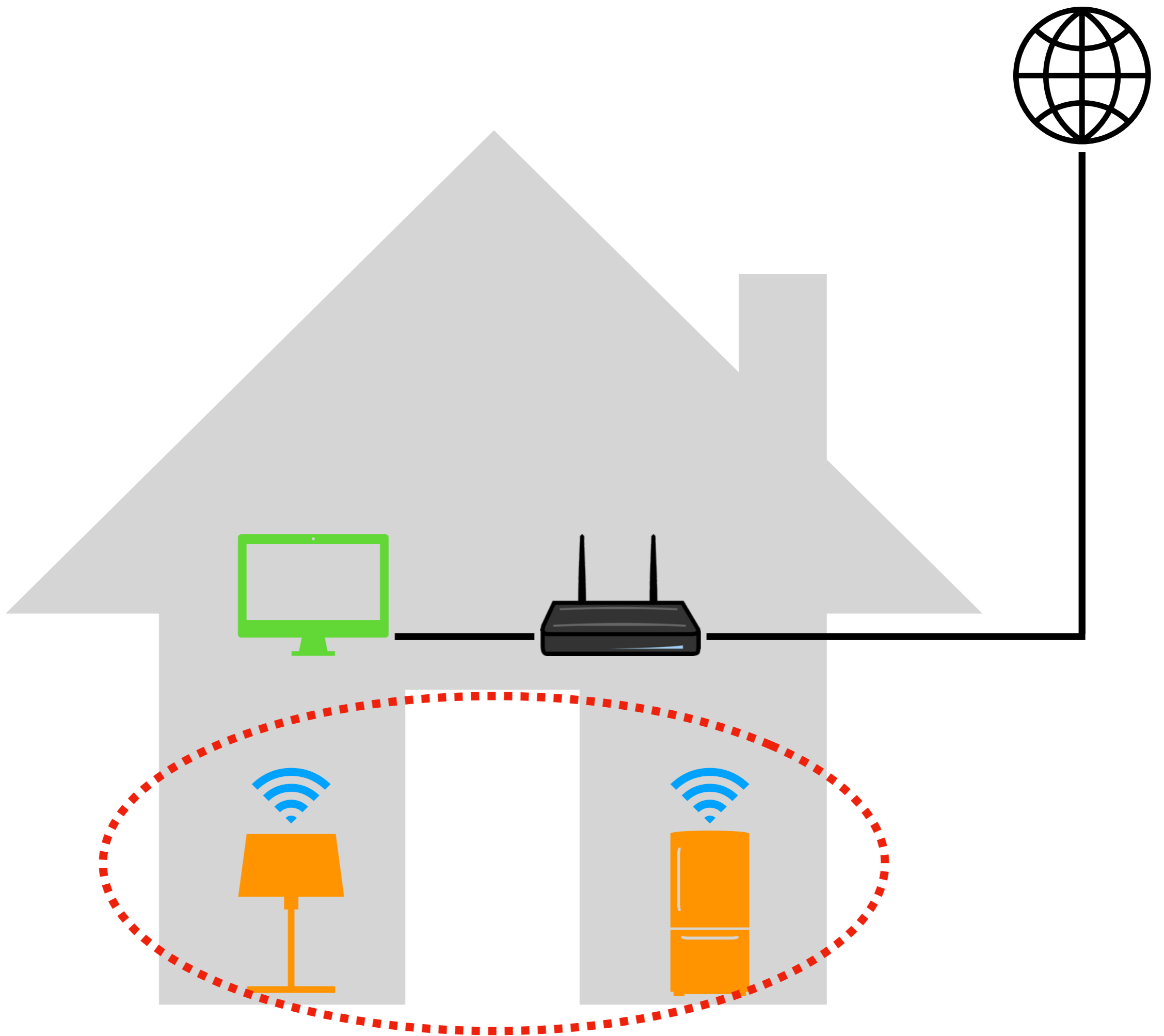
**OPEN AND CLOSE GARAGE DOORS**



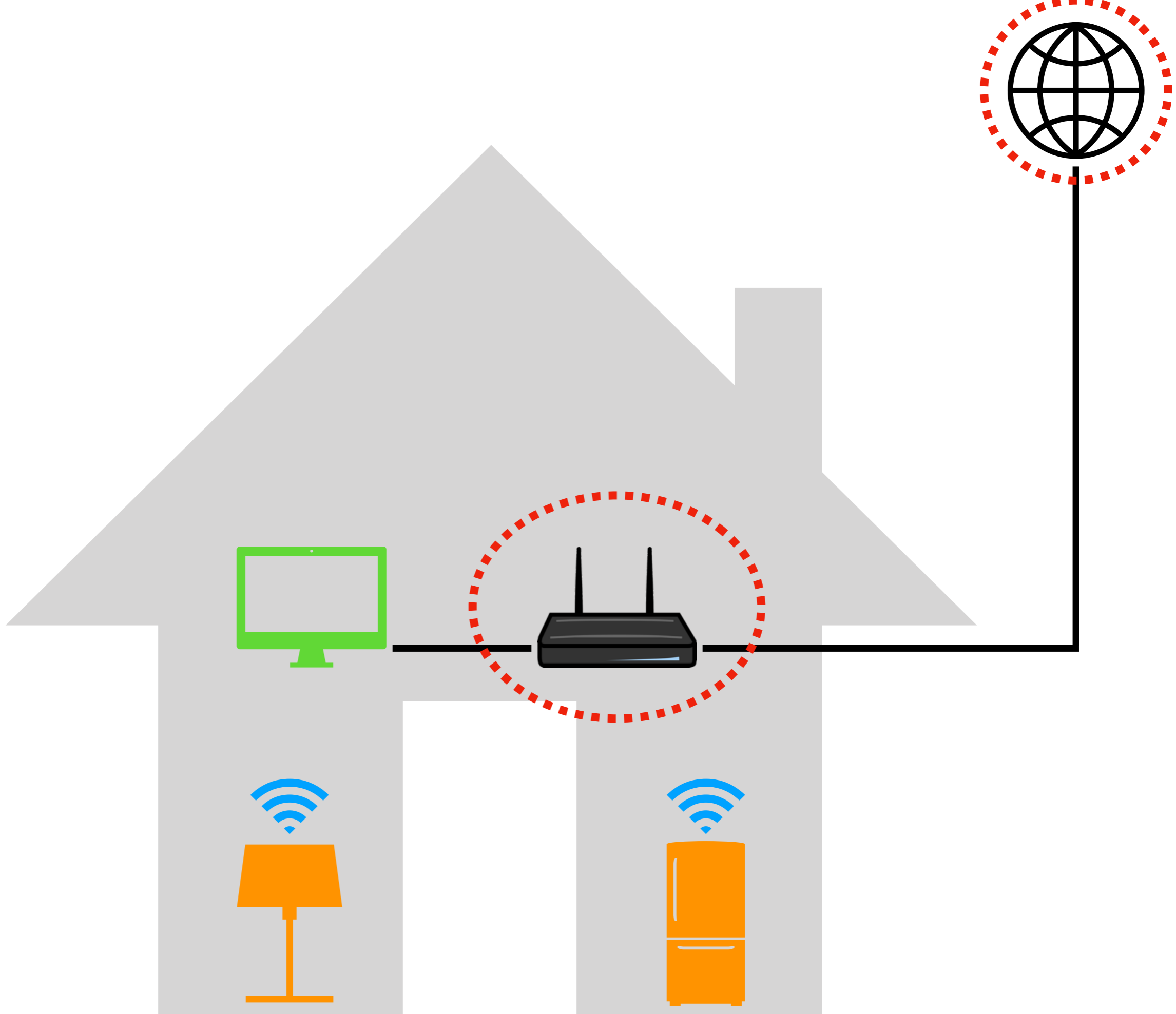


















[[Docs](#)] [[txt](#)|[pdf](#)] [[draft-ietf-opsa...](#)] [[Tracker](#)] [[Diff1](#)] [[Diff2](#)] [[Errata](#)]

PROPOSED STANDARD

[Errata](#) [Exist](#)

Internet Engineering Task Force (IETF)

Request for Comments: 8520

Category: Standards Track

ISSN: 2070-1721

E. Lear

Cisco Systems

R. Droms

Google

D. Romascanu

March 2019

## **Manufacturer Usage Description Specification**

### **Abstract**

This memo specifies a component-based architecture for Manufacturer Usage Descriptions (MUDs). The goal of MUD is to provide a means for end devices to signal to the network what sort of access and network functionality they require to properly function. The initial focus is on access control. Later work can delve into other aspects.

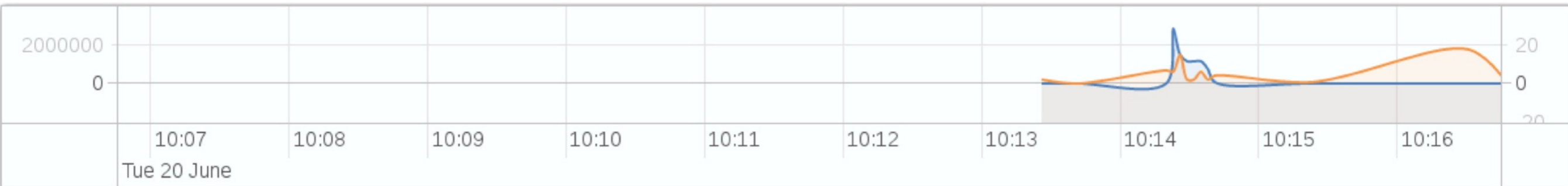
This memo specifies two YANG modules, IPv4 and IPv6 DHCP options, a Link Layer Discovery Protocol (LLDP) TLV, a URL, an X.509 certificate extension, and a means to sign and verify the descriptions.

### **Status of This Memo**

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in [Section 2 of RFC 7841](#).





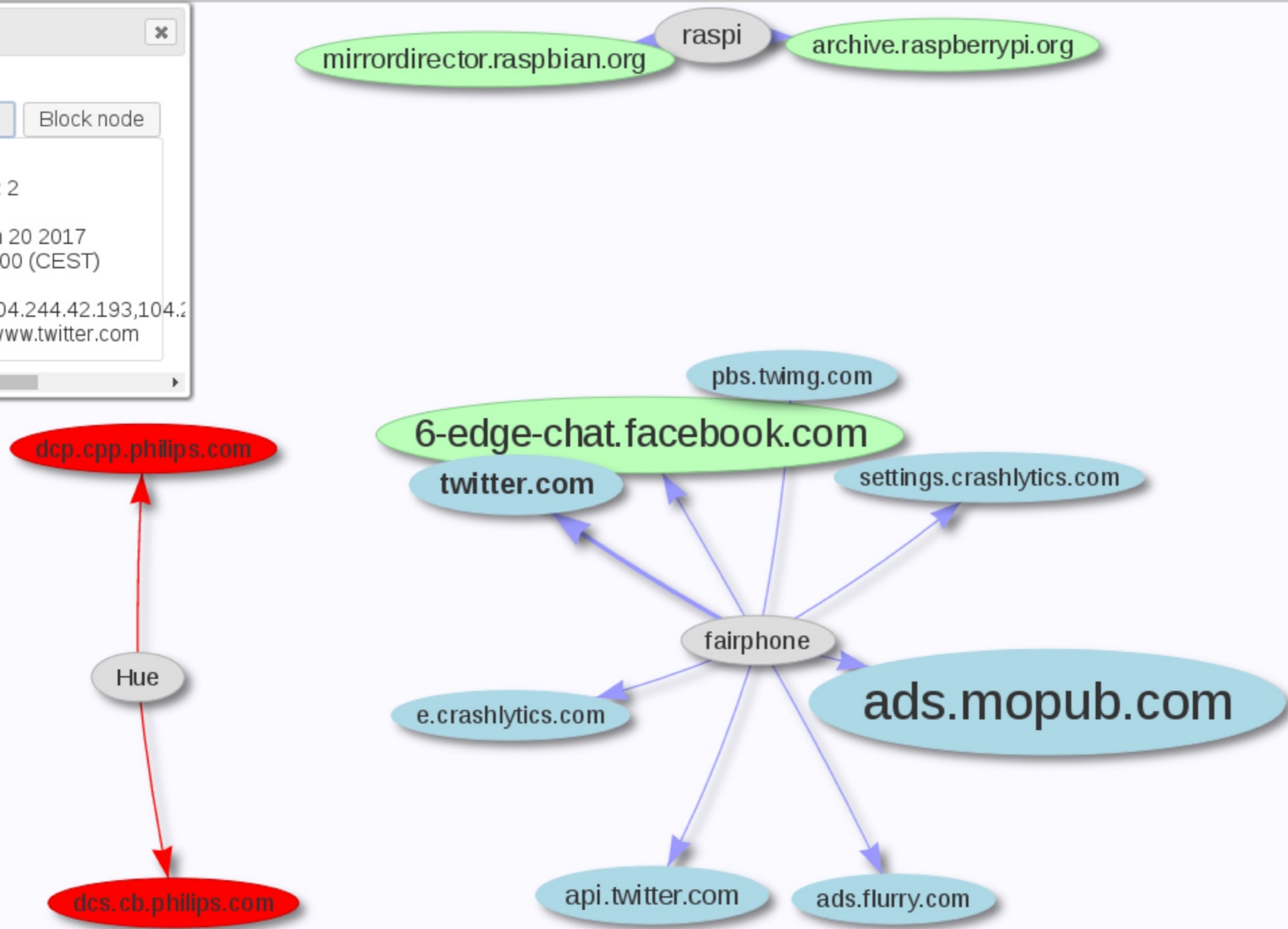
**twitter.com** ✕

Ignore this node

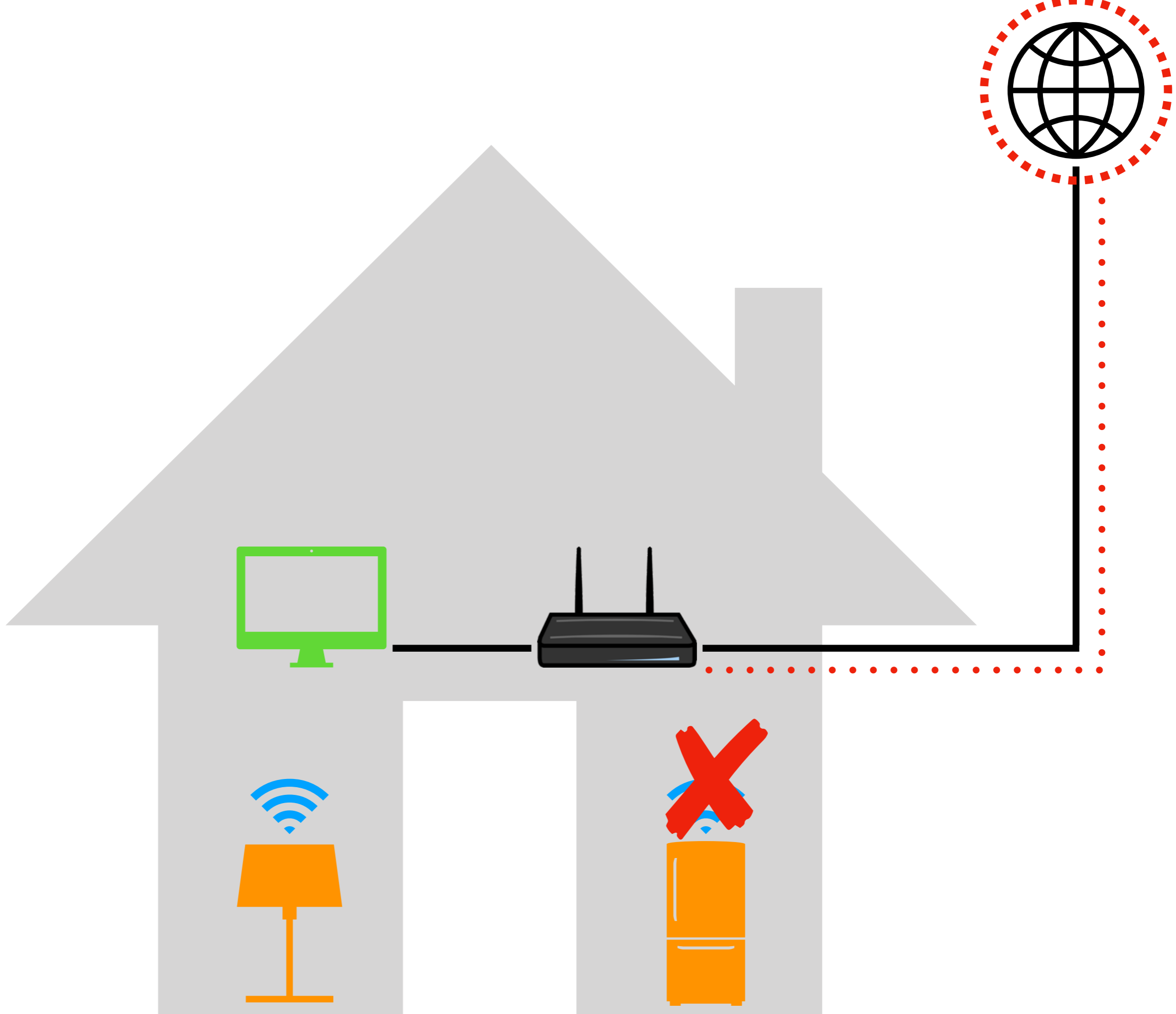
Rename this node Block node

---

Node: 35  
 Connections seen: 2  
 Traffic size: 1850  
 Last seen: Tue Jun 20 2017  
 10:14:35 GMT+0200 (CEST)  
 IP:  
 104.244.42.129,104.244.42.193,104.244.42.253  
 DNS: twitter.com,www.twitter.com













**CAUTION**

**KEEP OUT**

---

**QUARANTINE**

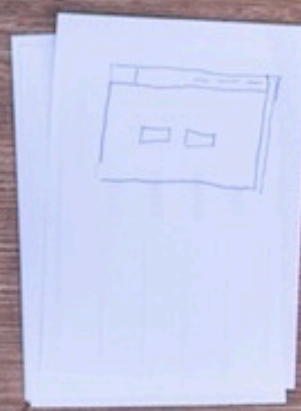






**LoRaWAN™**













I'm watching you













# ENERG



SUPPLIER'S NAME

MODEL IDENTIFIER



**XYZ** kWh/annum



**XYZ** L or m<sup>3</sup>



**XY**°C

**XY**°C



**XYZ** m<sup>2</sup>

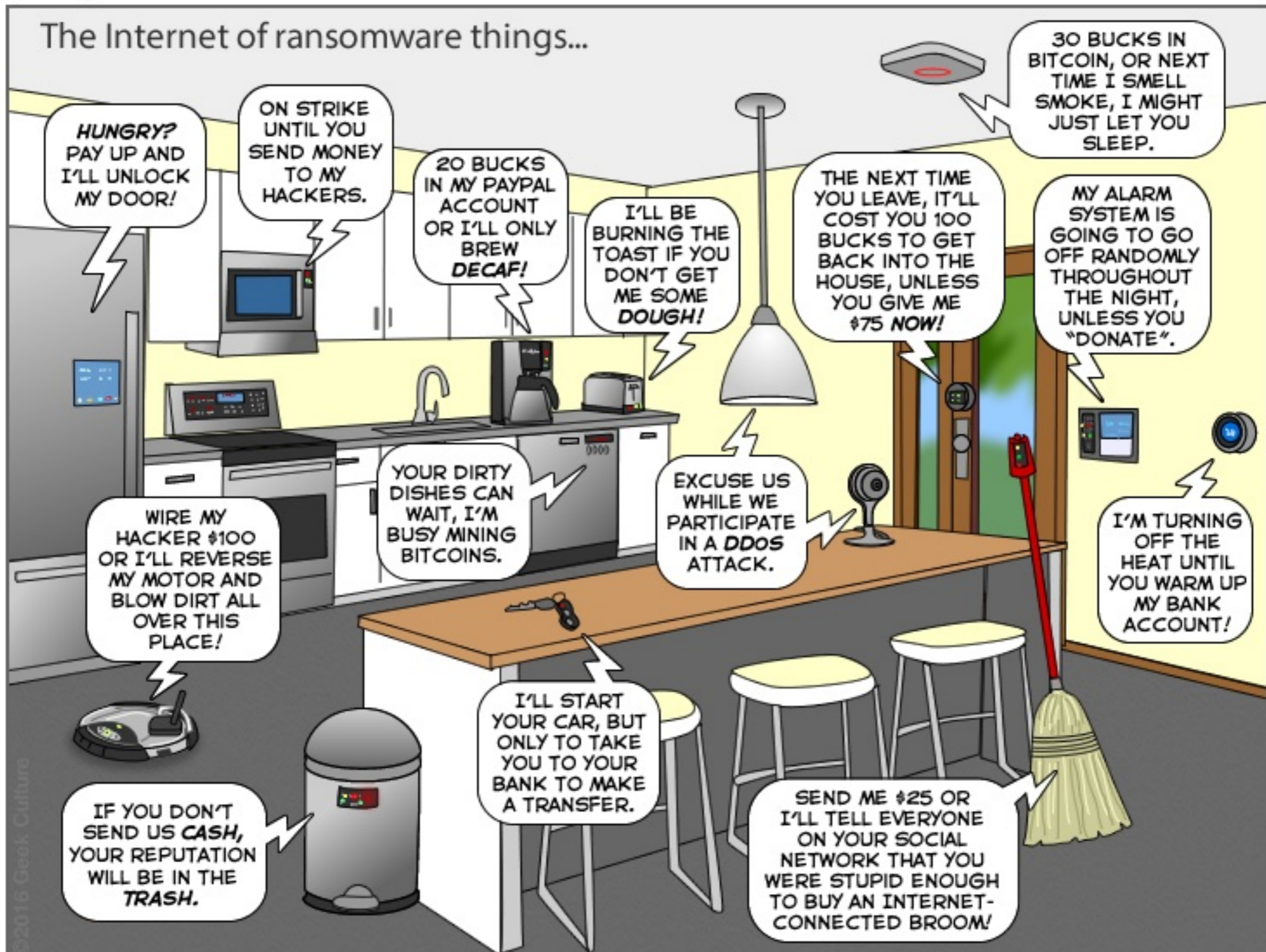


**XY**°C

**XY**°C



# The Internet of ransomware things...





# Q&A

<https://spin.sidnlabs.nl>

<https://github.com/sidn/spin>

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